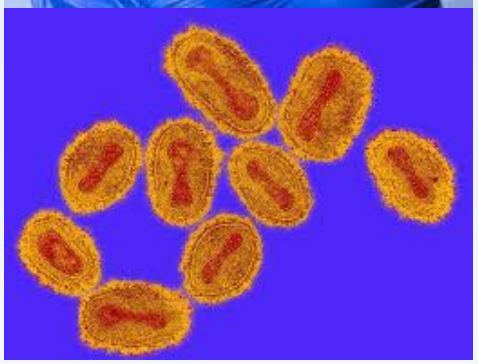




ABSTRACT BOOK

Infectious Diseases, Biothreats, and Military Medicine

Latest Perspectives on Infectious Diseases including Biothreats and Military Medicine

Surabaya, 27-28 August 2019

Organized by:
Institute of Tropical Disease
Universitas Airlangga

Prof. Dr. Mohammad Nasih, SE., M.T., Ak., CMA
Rector Speech
August 27th 2019

Assalamualaikum Warahmatullah Wabaraktuh

Good Morning and a very warm greeting for all of you.

The conference on Infectious Diseases, Biothreats, and Military Medicine is a dissemination activity on researches' results which is held from a collaboration with the Institute of Tropical Disease (ITD) Universitas Airlangga and the Indonesian Armed Forces Surgeon General Office. Collaboration and dissemination of research result at international level is one effort of Universitas Airlangga in becoming World Class University. One way of doing it is by holding a conference. Here, at the rectorate building, we are going to share information on research results about treatment and prevention of infectious disease, biothreats, and military medicine.

Universitas Airlangga has been awarded as the Center of Excellence in Science and Technology for Medical and Molecular Biology, through its Institute of Tropical Diseases and Development of Stem Cell. Along with our Institute of Tropical Disease (ITD), Universitas Airlangga's efforts to become a health science center in Indonesia is also increasingly recognized through the development of Airlangga University Teaching Hospital, Tropical Infection Hospital, Dental Hospital, and Animal Hospital. Our Institute of Tropical Diseases has been developing various research on tropical diseases, and the University intends to expand its research focus not only on tropical diseases but also on medical and health issues.

The ongoing research activities in Universitas Airlangga involve researchers from various existing disciplines. The University's research collaboration with other universities abroad and also with the pharmaceutical industry in the triple helix scheme are also widely developed. All of the facilities in Universitas Airlangga were realized thanks to cooperation and support from the government and our institution partner. In order to ensure the continuity of the research, we hope that positive interactions and cooperation will remain well established.

Ladies and Gentleman,

International Conference is part of our effort, to bring acknowledgment of the world towards Universitas Airlangga as we are developing several research center in the area of social, life, and health science.

For Social & Humanities Development, we have established a research center for East Asia and Latin America in culture, language and social politics. We also endorse academic mobility for students exchange and staff exchange within East Asia and Latin America area and establish an international class for humanities, business & economics. These research centres resulted in some publications, product prototypes, or regulations applied in the government level and presented at International conferences.

Universitas Airlangga is intensifying its participation in various scientific forums, especially in the area of life science. Universitas Airlangga has Biological Molecular Engineering Research Center, Natural Product Medicine Research Development (or NPMRD) Study Group, Airlangga Pharmacy, and also Faculty of Pharmacy Testing Service Unit. All are established and developed to provide testing service for the education, research and community service.

Natural Product Medicine Research Development (or NPMRD) Study Group is also established to support research collaboration between Universitas Airlangga, Indonesia and Kobe University, Japan through JICA/JST SATREPS on 2010. Currently, NPMRD research focused on drug discovery and natural medicine development including efficacy, safety, and quality guaranteed

medicine. In this study group, the best science and technology in the field of pharmacy, chemistry, biology, and medical is combined and supported by reliable equipment and staff.

The main program in NPMRD study group was to provide innovative research for the discovery of medicines for infectious diseases such as anti-hepatitis, antimalarial, antiamoebic, anti-dengue, etc. and noninfectious diseases such as hepatoprotective, immunomodulator, and health supplement, and also as laboratory testing and training for public services.

NPMRD Study Group has several research experiences, that includes Kobe University and National Institute of Biomedical Innovation (NIBIO), Japan. NPMRD Study Group also has research experience with Indonesia Military Health Institution (or Lakesmil). Several other research experiences include Pharmaceutical company such as PT. Kimia Farma (Persero) Tbk, Indonesia.

Meanwhile, Airlangga Pharmacy is the first teaching pharmacy in Indonesia. As a teaching pharmacy, its motto is "*No Pharmacist No Service*". The establishment of this pharmacy was aimed to improve the skill of pharmacists graduated from the Faculty of Pharmacy Universitas Airlangga especially their professionalism. We also have Universitas Airlangga Faculty of Pharmacy Testing Service Unit (ULP-FFUA), a testing laboratory of chemical and microbiological drugs, food and cosmetics, established and developed to provide testing service for the education, research and community service.

Ladies and Gentleman,

In Indonesia, non-natural facts that reinforce the notion that there is bioterrorism in Indonesia has not been resolved. This includes Avian Influenza that has occurred since 2003, including the 2009 swine flu which is also unnatural in structure. Likewise, the avian influenza virus that attacked the ducks in 2012, was not the same as the previous avian influenza virus. This emphasizes the role of molecular biology in anticipating bioterrorism and the need for biodefense vaccine preparation.

The levels of vulnerability are so high, that we need to reduce burdens of the climate-sensitive health determinants and outcomes. Other than access to safe water and improved sanitation, we also need biosecurity and surveillance programs to identify and respond to infectious diseases outbreaks. Malaria kills hundreds of thousands a year and despite eradication efforts, it’s still a monumental task for public health. What we need is an unparalleled opportunity to share experiences and engage in meaningful discussions on global health security.

The plaque that infects in Indonesia must be examined not only in terms of public health but from various aspects that can threaten national resilience. This may include the ability and resilience of the Indonesian people in maintaining their existence to carry out their lives according to their ideas and images that include demography, natural resources, ideological, political, economic, social and military power

Biological warfare is the intentional use of micro-organisms, and toxins, generally of microbial, plant or animal origin to produce disease and death in humans, livestock and crops. The attraction of bioweapons in war, and for use in terroristic attacks is attributed to easy access to a wide range of disease-producing biological agents. Also, novel and accessible technologies give rise to the proliferation of such weapons that have implications for regional and global security. In counteraction of such threats, and in securing the culture and defence of peace, the need for leadership and example in devising preventive and protective strategies has been emphasized through international consultation and co-operation. Adherence to the Biological and Toxin Weapons Convention reinforced by confidence-building measures sustained by use of monitoring and verification protocols, is true, an important and necessary step in reducing and eliminating the threats of biological warfare and bioterrorism.

Ladies and Gentleman,

It is therefore, we have this international conference that accommodates broad topics in infectious research, such as biochemistry, bioactive natural products, immunology, *etc*. The objective

is to promote research in infectious diseases, biothreats, and military medicine. Hopefully, this can also be a forum for scientists, professionals, and students to share their achievements and to discuss their research problems. Last but not least, this conference can facilitate seminar participants to publish their papers in international journals.

Wassalamualaikum Warahmatullah Wabarakatuh.

Prof. Dr. Mohammad Nasih, SE., M.T., Ak., CMA
Rector, Universitas Airlangga

Prof. Soetjipto dr., M.S., Ph.D.
CHAIRMAN OF THE ORGANIZING COMMITTEE
August 27th 2019

Assalamualaikom wr. Wb,
Good morning,

Excellencies,
Minister of Health, Republic of Indonesia, or Representative,
Minister of Research Technology and Higher Education, Republic of Indonesia, or Representative,
Commander in Chief of The Indonesian National Armed Forces, Republic of Indonesia or Representative,
Rector of Universitas Airlangga
All Keynote Speakers,
All Plenary Lecturers,
Presenters and Participants,
Ladies and gentlemen,

First of all, Alhamdulilahirabbil 'alamin, my deepest gratitude goes to the Almighty in this opportunity in which we all gather here to attend the international conference raising the theme on *Infectious Diseases, Biothreats and Military Medicine*. I would like to welcome all of the excellencies here, keynote speakers, presenters, participants to the conference, and welcome to Universitas Airlangga.

Excellencies, Ladies, and gentlemen,

The conference has successfully gathered 16 plenary lecturers, more less 200 participants, and more than 100 papers, ranging from various topics on infectious diseases to policies on dealing the infectious diseases. The goals of the conference are not merely promote the research of infectious diseases and be a forum for the academics/researchers. I believe this conference is also aimed at maximizing our roles, especially those who are involved in the field of Medicine or Health.

Over time, we understand that there are increasing concerns about infectious diseases that do not only relate to the issue of public health but may coalesce with national security. The discussion of infectious disease is no longer about prevention but also preparedness. More importantly, infectious diseases are increasingly related to the discussion about biothreats that is commonly associated with military uses. The dangerous nature of infectious diseases and biothreats alarmingly evolves. This leads to the importance of understanding biological threats, but also encourages various parties, including those in health and medical sector, government sector as well as those in military field to build more expertise in understanding and intervening the threats.

Hence, we do believe that the dynamic nature of infectious diseases as well as biothreats cannot be solely discussed from the perspective of medical and health, but also need to be perceived as a strategic issue for nations. Consequently, the interventions are needed to be approached through integrated efforts amongs various parties, including higher education institutions, research institutions, and military or armed forces. This involvement is articulated in such a collaboration between Universitas Airlangga in this case represented by the Institute of Tropical Diseases and the Indonesian National Armed Forces known as Tentara Nasional Indonesia. The Indonesian National Armed Forces has played a very important role as well to establish the national health resilience, and to prevent any biothreats even bioterrorism. Military medicine becomes a crucial aspect in this issue. On this basis, this conference is conducted. It is expected that through this conference, we can propose and promote

any ideas or thoughts which contribute to increase the understanding and elaborated efforts to deal with the issue of infectious diseases, biothreats and military medicine.

Excellencies, Ladies and gentlemen,

Before I end my speech, I would like to give my sincere appreciation to Rector Universitas Airlangga, and anyone of those who have given their support so that the two-day conference can be held. I thank you to Indonesian National Armed Forces, Indonesian Physicians Associations known as IDI, and the committee that I cannot mention one by one. I really thank you for all of the assistance and I could not have said enough thankfulness. For the presenters and participants, I am wishing you have more insights knowledge on the topic discussed, more networkings, and more engaging discussions during this two day conference.

At this moment, I would like to humbly invite the willingness of Prof. Mohammad Nasih, the Rector of Universitas Airlangga, to give his speech and officially open the conference.

Thank you very much and I wish you all having a wonderful conference.

Wassalamualaikum Warahmatullah Wabarakatuh

Sinceely yours,

Prof. Soetjipto, M.D., M.S., Ph.D

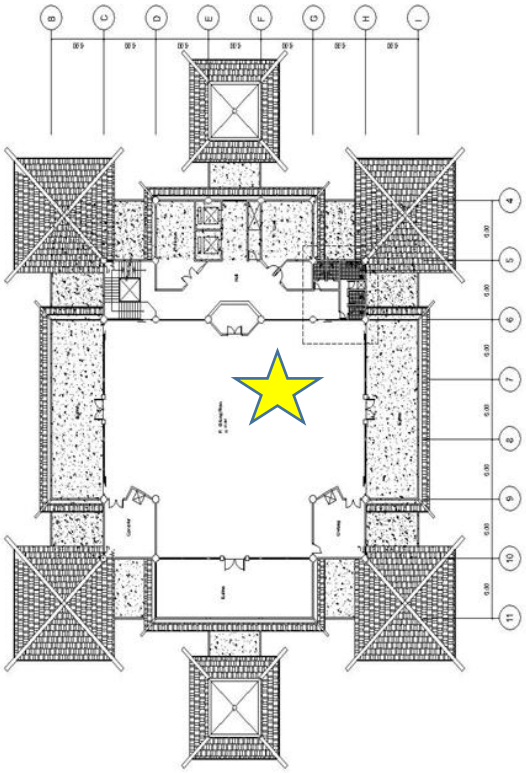
ORGANIZING COMMITTEE

STEERING COMMITTEE	
Prof. Dr. Mohammad Nasih, SE., M.T., Ak., CMA Prof., Ir. Moch Amin Alamsjah M.Si., Ph.D. Prof. Soetjipto dr., M.S., Ph.D. Prof. Dr. Maria Lucia Inge Lusida, dr, M.Kes, Ph.D, Sp.MK(K)	
ORGANIZING COMMITTEE	
Chairman	Prof. Soetjipto dr., M.S., Ph.D.
Co-Chairman	Prof. Dr. Achmad Fuad Hafid, MS.,Apt Prof. Dr. Ni Nyoman Tri Puspaningsih, M.Si.
Secretary, Promotion and Registration	Dr. Marcellino Rudyanto., M.Si., P.hD Dr. Ali Rohman., M.Si Zakaria Pamoengkas, S.Si Furqon Daniel Aksani T, S.Kom Lailatul Fitri., S.Si., M.Si Muh. Qushai Yunifiar M., A.Md Yulyasri Christiani Saragi., S.I.Kom Farid Zakaria., S.Kom
Public Relation	Dr. Eduardus Bimo Aksono Herupradokto., drh. M.Kes
Treasury	Dr. Sukmawati Basuki., dr., M.Sc Dwi Wahyu Indriati., S.Si., Ph.D Sinda Arista Rusanti., S.A
Scientific Program	Tutik Sri Wahyuni, S.Si., MSi., PhD., Apt Dr. Prihartini Widyanti., drg. M.Kes Dr. Juniastuti., dr., M.Kes Dwi Wahyu Indriati., S.Si., Ph.D Dr. Aty Widiyawaruyanti., M.Si., Apt Prof. Indah Setyawati Tantular dr.,M.Kes.,Ph.D.,Sp.ParK. Dr. Sukmawati Basuki., dr., M.Sc Lidya Tumewu., S. Farm., Apt., M.Farm Dr. Ni Njoman Juliasih., dr., M.Kes Laura Navika Yamani., Ph.D Nur Diana Fajriyah., A.Md
Publication	Muhammad Miftahussurur dr., M.Kes., Sp.PD. Ph.D Iman Harymawan., SE., MBA.,
Event Management	Edith Frederika Puruhito., SKM., MSc Pepy Dwi Endraswari dr., M.Si Teguh Hari Sucipto., S.Si., M.Si Naritha V., dr., Sp. MK Dr. Indeswari Diyantri., drg., MS. Dr. Retno Puji Rahayu., drg., M.Kes Saadun., S.Sos., M.Si
Equipment, Transportation and Documentation	Dr. Dadik Raharjo., drh., M.Kes Wartono., SH. MM

	Moch. Amin., S.Si., M.Si Kris Cahyo Mulyanto., S.KM Novi Irfandi Musyadi Agus Mulyadi
Cateering	Dr. Rebekah Juniati Setiabudi., dr., M.Si Dr. Manik Retno W., dr., M.Kes

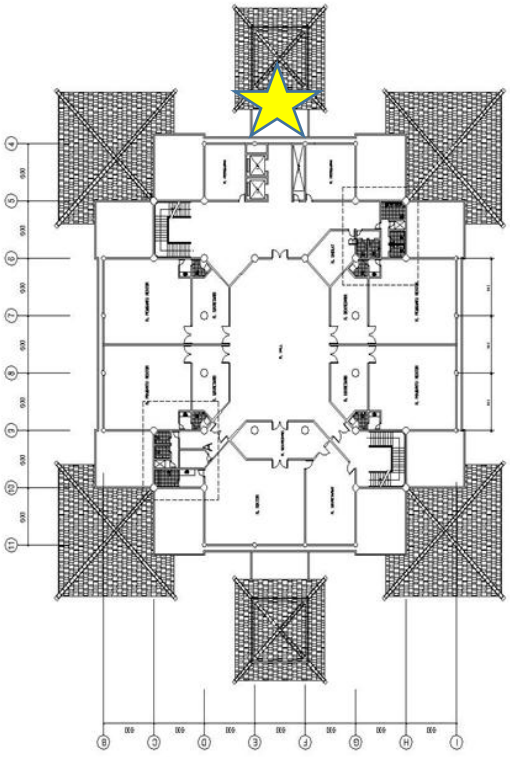
MAP OF VENUE

5th Floor Garuda Mukti Room



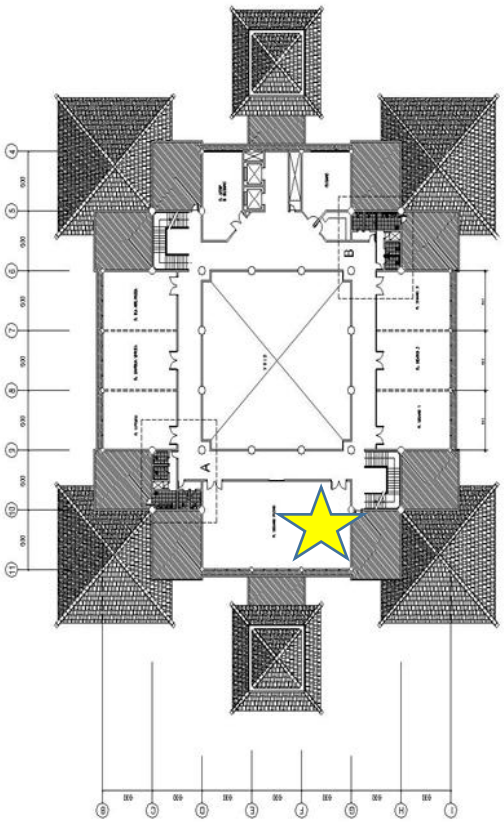
U

4th Floor Amerta Room

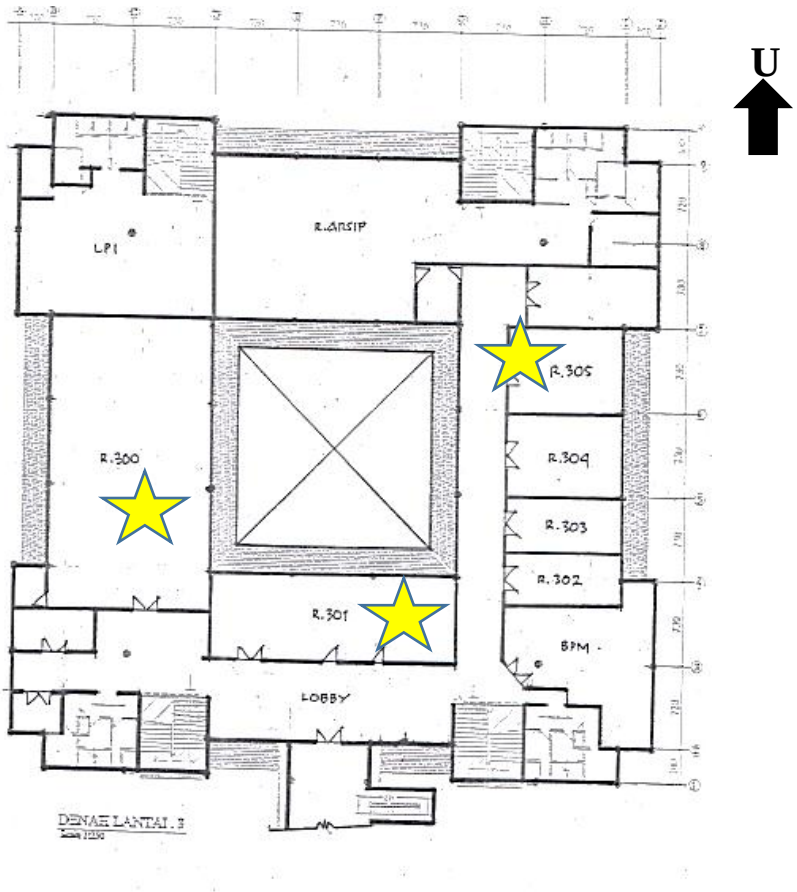


U

3rd Floor Pleno Room



3rd Floor Kahuripan 300 Room and Kahuripan 301 Room



Day 1 (Tuesday, August 27th 2019)

07.15 - 07.45 Registration| Aula Garuda Mukti
07.45 – 08.00 Welcome dance – Tari REMO |Aula Garuda Mukti
08.00 – 08.30 Opening Remarks| Aula Garuda Mukti
(1) Prof. Soetjipto, dr., MS., PhD.|Chairperson of the Organizing Committee
(2) Prof. Dr. Mohammad Nasih, SE., MT., Ak., CMA. | Rector Universitas Airlangga

KEYNOTE SPEECHES | AULA GARUDA MUKTI

Moderator : Prof. Djoko Santoso, dr., PhD., K-GH., FINASIM | Vice Rector 1 Universitas Airlangga
08.30 - 08.50 **Minister of Health Republic of Indonesia (or the Representative)**
08.50 - 09.10 **Dr. Lukman, S.T., M.Hum. |Head of sub-directorate for Scientific Journal Facilitation, Directorate General of Research Strengthening and Development, Ministy of Research Technology and Higher Education, Republic of Indonesia**
09.10 - 09.30 **MG. Bambang Dwihasto, dr., Sp.B., M.Si. |Head of The Indonesian National Armed Forces Health Center, Republic of Indonesia**
09.30 - 09.35 PHOTO SESSIONS
09.35 – 09.55 COFFEE BREAK AND POSTER SESSION | AULA KAHURIPAN 300

09.55-11.15	**PLENARY LECTURES 1	AULA GARUDA MUKTI**
Moderator	**Col (MC) Iwan Trihapsoro, MD., M.Derm., M.AvMed., FINSDV., FAADV.**
09.55 -10.15	**Emily S. Kelley**	Senior Operations Manager of the Biological Threat Reduction Program (BTRP), US DTRA (Defense Threat Reduction Agency) Title: *"Biological Threat Reduction in the Asia-Pacific Region"*
10.15 -10.35	**Mark D. Lim, Ph.D., PMP.**| American Society for Microbiology (ASM). Title : *"The Need to Implement One Health Tools to Combat Emerging and Re-Emerging Infectious/Tropical Diseases"*
Moderator	**Prof. Maria Inge Lusida, dr., M.Kes., Ph.D., Sp.MK(K).**
10.35 -10.55	**Prof. drh. Wiku Adi Sasmito, M.Sc., Ph.D. |** Indonesian One Health University Network Title : *"The Urgency of Laboratory Biological Risk Management National Policy in Indonesia"*
10.55 -11.15	**Col (MC) Iwan Trihapsoro, MD., M.Derm., M.AvMed., FINSDV., FAADV.|** Title: "*Global Health Security, Indonesian Perspective"*
11.15 – 11.35	**BG. Aexander K Ginting S, dr., Sp.P., FCCP** Tittle: *"Military Engagement and Interagency Cooperation in Biothreat Prevention and Reduction."*
11.35 – 11.50	**Discussion**
10.00-12.00	**INVITED LECTURES : UNAIR collaboration with MAHIDOL UNIVERSITY	RUANG SIDANG PLENO**
TOPICS	**VIVAX MALARIA: THE CHALLENGES TOWARDS MALARIA ELIMINATION**
Moderator	**Dr. Sukmawati Basuki, dr., M.Sc.**
10.00 -10.30	**Prof. Dr. Srivicha Krudsood**	Deputy Director WHO CC for Clinical Management of Malaria, Faculty of Tropical Medicine, Mahidol University Bangkok, Thailand. Title: *"The Possibility of Vivax Malaria Elimination: Clinical Overview"*
10.30 -11.00	**Asc. Prof. Dr. Usa Boonyuen|** Department of Molecular Tropical Medicine and Genetics, Faculty of Tropical Medicine, Mahidol University Bangkok, Thailand. Title: *"G6PD Deficiency: Prevalence, Molecular Diagnosis, and Characterization"*
11.00 - 11.30	**Dr. Rapatbhorn Patrapuyich |** Head, Drug Research Unit for Malaria, Mahidol University Bangkok, Thailand. Title: *"Chasing P. vivax Hypnozoite"*
11.30 -12.00	**Dwi Sulaksono, ST, M.Kes**	Kepala Seksi Pengembangan Teknologi Laboratorium BBTKLPP Surabaya.

11.50 – 12.50 LUNCH AND POSTER SESSION | AULA KAHURIPAN 300
PRAYER TIME | MASJID ULUL' AZMI

13.00 – 17.00	FREE PAPERS : PARALLEL SESSION 1	
	KAHURIPAN 301	**KAHURIPAN 305**
13.00 – 14.15	**Moderator : Prof. Indah S. Tantular, dr., M.Kes., Ph.D., Sp.ParK.**	**Moderator : Dr. Ni Nyoman Juliasih, dr., M.Kes.**
	OP 001 - 005	OP 006 - 010
14.15 – 15.30	**Moderator : Dr. Waras Budiman**	**Moderator : Dr. Prihartini Widiyanti, drg., M.Kes.**
	OP 011 - 015	OP 015 - 020
15.30 – 17.00	**Moderator : Dwi Wahyu Indriati, S.Si., Ph.D.**	**Moderator : Dr. Juniastuti, dr., M.Kes.**
	OP021-026	OP027-032

17.00 – 17.10 POSTER SESSION AND COFFEE BREAK | AULA KAHURIPAN 300
PRAYER TIME | MASJID ULUL' AZMI

Day 2 (Wednesday, August 28th 2019)

08.00 – 08.30 Registration | AULA GARUDA MUKTI

08.30-10.10	PLENARY LECTURES 2 | AULA GARUDA MUKTI
Moderator	**Kol DR dr Wawan Mulyawan, Sp.BS, Sp.KP, AAK**
08.30 - 08.50	**1st Admiral Indonesian Armed Force Arie Zakaria, dr., Sp.OT., Sp.KL., FICS** | Director of Health Directorate General of Defense Strength of Ministry of Defense. Title: *"Millitary Medicine Role in Managing National Defense Threats"*
08.50 - 09.10	**Jason Edward Rao, Ph.D.** | Consultant of Defense Threat Reduction Agency Title*: "Global Partnerships for Biological Threat Reduction"*
09.10 - 09.30	**MG TNI Dr. dr. Tugas Ratmono, Sp.S.** | Chief of Army Health Center Title: *"Bio-Threats Management"*
Moderator	**Prof. Soetjpto, dr., MS., Ph.D.**
09.30 - 09.50	**Prof. Dr. Kuntaman, dr., MS., Sp.MK(K)** | PPRA Team RSUD Dr. Soetomo Title *: "The Threat of Infectious Diseases in the Era of Antimicrobial Resistance"*
09.50 - 10.10	**Ludy Suryantoro** | World Health Organization Headquarters, Geneva-Switzerland Title: *"Team Leader Strategic Partnership for Health Security"*
10.10 -10.25	**Discussion**
10.25-10.40	**POSTER SESSION AND COFFEE BREAK | AULA KAHURIPAN 300**

10.40 -12.00	PLENARY LECTURES 3 | AULA GARUDA MUKTI
Moderator	**Col. DR. dr. Soroy Lardo, Sp.PD., FINASIM**
10.40 –11.00	**Prof. Simo Nikari, MD., Ph.D.** | Finish Defense Forces. Title: *"Global Bio-threat Reduction through One Health Collaboration – the Finnish Respective"*
11.00 –11.20	**Dr Rintis Novyanti** | Eijkman Institute Title: *"Plasmodium Genotiping Studies in Indonesia: The Views on Its Application in Support to Malaria Ellimination Program"*
Moderator	**Emily S. Kelley**
11.20 –11.40	**Prof. Tomoyoshi Nozaki, MD., Ph.D.** | Tokyo University Title *: "Drug Development Against Tropical Diseases using Indonesian Bio-resources"*
11.40 -12.00	**Prof. Maria Inge Lusida, dr., M.Kes., PhD., Sp.MK(K)** | Institute of Tropical Disease, Universitas Airlangga Title : *"Viral Diarrhea in Indonesia: Molecular Epidemiology, Genetic Diversity of Rota and Noroviruses"*
12.00 – 12.15	**Discussion**
12.15-13.15	**POSTER SESSION AND LUNCH BREAK | AULA KAHURIPAN 300** **PRAYER TIME | MASJID ULUL' AZMI**

13.15 -14.35	PLENARY LECTURES 4 | AULA GARUDA MUKTI
Moderator	**Prof. Tomoyoshi Nozaki, MD., Ph.D.**
13.15 -13.35	**Prof. Dr. Wayan Tunas Artama, drh.** | Universitas Gadjah Mada Title: *"Emerging-Reemerging Infectious Disease and Biothreats"*
13.35 -13.55	**Dr. Imran Pambudi** | Indonesia Ministry of Health Title : *"Center of Excelence of Tuberculosis for Mobilizing Resources to End TB 2030"*

Moderator	**Prof. Dr. Nasronudin, dr., Sp.PD., K-PTI., FINASIM**
13.55 – 14.15	**Prof. Dr. Fedik Abdul Rantam, drh.** | Indonesian One Health University Network, Universitas Airlangga. Title: "*One Health City 4.0 for Elimination and Prevention New Infectious Disease"*
14.15 -14.35	**Prof. Dr. Achmad Fuad Hafid, MS., Apt. |** Institute of Tropical Disease, Universitas Airlangga Title: *"Indonesian Biodiversity: The Strategy to Discover an Alternative Drugs for Anti-infectious Diseases"*
14.35 – 14.55	**Prof. Dr. Eddy Bagus Warsito, dr., MS., Sp.MK(K)** | Faculty of Medicine, Universitas Airlangga Title: "*Ethics in Life Sciences*"
14.55 – 15.10	**Discussion**

15.10 – 15.25 POSTER SESSION AND COFFEE BREAK | AULA KAHURIPAN 300

15.25 – 16.45 FREE PAPERS : PARALLEL SESSION 2

	KAHURIPAN 301	AULA GARUDA MUKTI
15.25 - 16.45	**Moderator: CAPT dr. Sapta**	**Moderator: Dr. Aty Widyawaruyanti, M.Si., Apt.**
	OP 033 – OP 038	OP 038 – OP 044

16.45 – 17.00 ORAL & POSTER PRESENTATION WINNER ANNOUNCEMENT
CLOSING CEREMONY

SCHEDULE OF INVITED SPEAKERS

Day 1 (Tuesday, August27th2019)

NUMBER	08.30-09.30	KEYNOTE SPEECHES
	Moderator	**Prof. Djoko Santoso, dr., PhD., K-GH., FINASIM | Vice Rector 1 Universitas Airlangga**
K1	08.30 - 08.50	**Minister of Health or Representative**, Republic of Indonesia
K2	08.50 - 09.10	**Dr. Lukman, S.T., M.Hum. |Head of sub-directorate for Scientific Journal Facilitation, Directorate General of Research Strengthening and Development, Ministy of Research Technology and Higher Education, Republic of Indonesia**
K3	09.10 - 09.30	**MG. Bambang Dwihasto, dr., Sp.B., M.Si. |Head of The Indonesian National Armed Forces Health Center, Republic of Indonesia**

NUMBER	09.55-11.35	PLENARY LECTURES 1 | AULA GARUDA MUKTI
	Moderator	**Col (MC) Iwan Trihapsoro, MD., M.Derm., M.AvMed., FINSDV., FAADV.**
PL1	09.55 -10.15	**Emily S. Kelley** | Senior Operations Manager of the Biological Threat Reduction Program (BTRP), US DTRA (Defense Threat Reduction Agency) Title: *"Biological Threat Reduction in The Asia-Pacific Region"*
PL2	10.15 -10.35	**Mark D. Lim, Ph.D., PMP.**| American Society for Microbiology (ASM). Title : *"Pathways for Translating Infectious Disease Research into Diagnostic and Therapeutic Products"*
	Moderator	**Prof. Maria Inge Lusida, dr., M.Kes., Ph.D., Sp.MK(K).**
PL3	10.35 -10.55	**Prof. drh. Wiku Adi Sasmito, M.Sc., Ph.D. |** Indonesian One Health University Network Title : *"The Urgency of Laboratory Biological Risk Management National Policy in Indonesia"*
PL4	10.55 - 11.15	**Col (MC) Iwan Trihapsoro, MD., M.Derm., M.AvMed., FINSDV., FAADV.**| Title: "*Global Health Security Civil Military Coordination Indonesian Perspective"*
PL5	11.15 – 11.35	**BG (R) Alexander K Ginting S. dr., Sp.P., FCCP** Title: *"Millitary Engagement and Interagency Cooperation in Biothreath Preventation and Reduction"*

NUMBER	**10.00-12.00**	**INVITED LECTURES : UNAIR collaboration with MAHIDOL UNIVERSITY | KAHURIPAN 301**
	TOPICS	**VIVAX MALARIA: THE CHALLENGES TOWARDS MALARIA ELIMINATION**
	Moderator	**Dr. Sukmawati Basuki, dr., M.Sc.**
IL1	10.00 -10.30	**Prof. Dr. Srivicha Krudsood** | Deputy Director WHO CC for Clinical Management of Malaria, Faculty of Tropical Medicine, Mahidol University Bangkok, Thailand. Title: *"The Possibility of Vivax Malaria Elimination: Clinical Overview"*
IL2	10.30 -11.00	**Asc. Prof. Dr. Usa Boonyuen**| Department of Molecular Tropical Medicine and Genetics, Faculty of Tropical Medicine, Mahidol University Bangkok, Thailand. Title: *"G6PD Deficiency: Prevalence, Molecular Diagnosis, and Characterization"*
IL3	11.00 - 11.30	**Dr. Rapatbhorn Patrapuyich |** Head, Drug Research Unit for Malaria, Mahidol University Bangkok, Thailand. Title: *"Chasing P. vivax Hypnozoite"*
IL4	11.30 -12.00	**Dwi Sulaksono, S.T.** | Kepala Seksi Pengembangan Teknologi Laboratorium BBTKLPP Surabaya

Day 2 (Wednesday, August28th2019)

NUMBER	08.30-10.10	PLENARY LECTURES 2 | AULA GARUDA MUKTI
	Moderator	**Kol. Kes. Dr. dr. Wawan Mulyawan, Sp. BS, Sp.KP, AAK**
PL6	08.30 - 08.50	**1st Admiral Arie Zakaria, dr., Sp.OT., Sp.KL., FICS** | Director of Health Directorate General of Defense Strength of Ministry of Defense. Title : "*Military Medicine Role in Managing National Defense Threats*"
PL7	08.50 - 09.10	**Jason Edward Rao, Ph.D. |** Consultant of Defense Threat Reduction Agency Title*: "Global Partnerships for Biological Threat Reduction"*
PL8	09.10 - 09.30	**MG. Dr. dr. Tugas Ratmono, Sp.S. |** Chief of Army Health Center Title: *"Biothreats Management"*
	Moderator	**Prof. Soetjpto, dr., MS., Ph.D.**
PL9	09.30 - 09.50	**Prof. Dr. Kuntaman, dr., MS., Sp.MK(K) |** PPRA Team RSUD Dr. Soetomo Title *: "The Threat of Infectious Diseases in the Era of Antimicrobial Resistance"*
PL10	09.50 - 10.10	**Ludy Suryantoro |** World Health Organization Headquarters, Geneva-Switzerland Title: *"Team Leader Strategic Partnership for Health Security"*

NUMBER	10.40 -12.00	PLENARY LECTURES 3 | AULA GARUDA MUKTI
	Moderator	**Col. dr. Soroy Lardo**
PL11	10.40 –11.00	**Prof. Simo Nikari, MD., Ph.D.** | Finish Defense Forces. Title: *"Global Bio-threat Reduction through One Health Collaboration – Finnish Perspective"*
PL12	11.00 –11.20	**Dr Rintis Novyanti** | Eijkman Institute Title: "*Plasmodium Genotyping Studies in Indonesia: the Views on Its Application in Support to Malaria Elimination Program"*
	Moderator	**Emily S. Kelley**
PL13	11.20 –11.40	**Prof. Tomoyoshi Nozaki, MD., Ph.D. |** Tokyo University Title *: "Drug Development against Tropical Diseases using Indonesian Bio-resources"*
PL14	11.40 -12.00	**Prof. Maria Inge Lusida, dr., M.Kes., PhD., Sp.MK(K) |** Institute of Tropical Disease, Universitas Airlangga Title : *"Viral Diarrhoea in Indonesia: Molecular Epidemiology, Genetic Diversity of Rota and Noroviruses"*
NUMBER	13.15 -14.55	PLENARY LECTURES 4 | AULA GARUDA MUKTI
	Moderator	**Prof. Tomoyoshi Nozaki, MD., Ph.D.**
PL15	13.15 -13.35	**Prof. Dr. Wayan Tunas Artama, drh. |** Universitas Gadjah Mada Title: *"Role of Wildlife in Disease Transmission and implementation One Health Approches in Controling EIDs"*
PL16	13.35 -13.55	**Dr. Imran Pambudi** | Indonesia Ministry of Health Title : *"Center of Excelence (CoE) of Tuberculosis for Mobilizing Resources to End TB 2030"*
	Moderator	**Prof. Dr. Nasronudin, dr., Sp.PD., K-PTI., FINASIM**
PL17	13.55 – 14.15	**Prof. Dr. Fedik Abdul Rantam, drh.** | Indonesian One Health University Network, Universitas Airlangga. Title: : "*One Health City 4.0 For Elimination and Prevention New Infectious Disease"*
PL18	14.15 -14.35	**Prof. Dr. Achmad Fuad Hafid, MS., Apt. |** Institute of Tropical Disease, Universitas Airlangga Title: *"Indonesian Biodiversity: The Strategy to Discover an Alternative Drugs for Anti-infectious Diseases"*
PL19	14.35 – 14.55	**Prof. Dr. Eddy Bagus Warsito, dr., MS., Sp.MK(K)** | Faculty of Medicine, Universitas Airlangga Title: "*Ethics in Life Sciences*"

CURRICULUM VITAE

Emily S. Kelley

Emily S. Kelley is the Senior Operations Manager of the Biological Threat Reduction Program (BTRP) within the Cooperative Threat Reduction Program (CTR). She manages the operations for three divisions within BTRP and sets priorities and direction for the acquisition and budgeting process for implementation. She leads strategic initiatives within the Department to align BTRP with broader DTRA and Department of Defence guidance. Previously, she was the BTRP Africa Regional Manager and the South Africa and Tanzania Country Manager. Ms Kelley has also served as the interim International Organizations Project Manager, responsible for BTRP's relationships and grants with the World Health Organization, Food and Agriculture Organization, and the Organization for Animal Health. Ms Kelley's expertise in strategic planning and diplomacy have been leveraged to close out lingering projects, implement holistic transition strategies, and open up opportunities for continued cooperative activities. From 2009 to 2012, Ms Kelley was a Senior Consultant for Booz Allen Hamilton, where she provided contracted support to the Department of Homeland Security's Science and Technology Directorate Chemical and Biological Defense Division. She supported Front Office tasks in ensuring the Division's responsiveness to interagency requests and led the Department of Homeland Security's integrating efforts to address Presidential Policy Directive 2, *National Strategy for Countering Biological Threats*. From 2007 to 2009, Ms Kelley was a Research Engineer for BAE Systems. There, she performed biological and chemical research for nanofibrinogin production and carbide-derived-carbon adsorption capabilities. She also managed laboratory equipment maintenance and supply inventory while completing coursework at Johns Hopkins University in Advanced Problems in Fluid Mechanics.

Mark D. Lim

Mark David Lim is the Director of Global Public Health Programs, American Society for Microbiology. His professional interests has been focused on the development and implementation of diagnostic tests for use in lesser resourced settings. At the American Society of Microbiology, Lim leads a team of program managers focused on strengthening human and animal laboratory systems for public health programs. This complements his past work funding the development of new diagnostic technologies at the Bill and Melinda Gates Foundation, where he focused on developing product requirement documents, market requirement documents, and an investment strategy for two neglected tropical diseases – schistosomiasis and infection by soil transmitted helminths. Prior to Lim's work at the Gates Foundation, he served as the Chief of Technical Staff for a program developing new diagnostic and vaccine platforms at the Defence Advanced Research Projects Agency. Lim completed his PhD in Inorganic Chemistry from the University of California Santa Barbara followed by a nanotechnology fellowship at the Universities of California San Francisco and Berkeley, and has published over 30 articles, book chapters, and perspectives in peer-reviewed media.

Prof. Wiku Adisasmito, DVM., M.Sc., Ph.D

Since 2012, Prof. Wiku Adisasmito has become the coordinator of Indonesia One Health University Network (INDOHUN). He is also an Affiliate Professor in Environmental Health Sciences, School of Public Health, University of Minnesota, USA, and Adjunct Professor in Infectious Disease and Global Health, Cummings School of Veterinary Medicine, Tufts University, USA. His research interest and expertise are in health system and prevention of infectious disease, including Antimicrobial Resistance. He has directed multi-project and multicentre scientific programs nationally and globally, funded by IDRC, USAID, GIZ, and Government of Indonesia. Under INDOHUN program, Prof. Wiku Adisasmito also coordinates the One Health Laboratory Network (OHLN) that currently has 12 university-based lab members to support the rapid identification of zoonotic diseases emerging among human and animal populations. At the moment, Prof. Wiku also the coordinator of Asia Partnership on Emerging Infectious Disease Research (APEIR), a regional research network that is implementing AMR research in 5 Asia countries. Previously, he led a 5 year program of major IDRC-funded multicentre investigations focused on the health impact of agricultural intensification in Indonesia.

Col (MC) Iwan Trihapsoro, MD., M.Derm., M.AvMed., FINSDV., FAADV

Colonel Iwan Trihapsoro, joined the Indonesian Air Force through Scholarship Officers Programs by Voluntary Military Officer School 1st Batch in 1988 and then finished his medical doctor in University of Sebelas Maret, Surakarta in 1991. When he assigned as Head of the Medan Air Force Base Hospital, he finished his Dermatology and Venereology Specialist in University of Sumatera Utara in 2002 and awarded as Aviation Medicine Specialist in 2012. After joined a Flight Surgeon Course in 1993, he worked as a Flight Surgeon in Air Force Flying Scholl at 102nd Training Squadron. He served as United Nations Protection Force (UNPROFOR) in former Yugoslavia in 1993-1994. Finished Command and Staff Collage in 2008 with Best Writer Graduate, he then assigned in several positions in Medical Service of the Air Force HQ and 1st Air Force Operation Command and now worked as Chief of General Affairs of the TNI Surgeon General Office and as a Country Coordinating Mechanism of Global Fund for AIDS, Malaria and Tuberculosis. His international courses were Australian Familiarization Course, Aero Medical Evacuation Course and Alcohol and Drugs Program Advisor in Australia. He also graduated from Executive Health Care Resource Management Course and Medical Senior Leadership Program from USA, and Law of Armed Conflict Course from ICMM. He hold a Flight Surgeon Wing, Combat Trauma Wing, Sharpshooter Wing, Scuba Diver Wing, and International MSLP Badge. Several honours has been received namely from Indonesia Aviation Medicine Association, Parachutist Medal of Honour and Air Force Medical Badge from Royal Thai Armed Forces, and decorated with eleven medals including Unprofor medal, Peace Veteran Honorary Sign and Yudha Dharma Nararya star. Colonel Iwan Trihapsoro works with WHO HQ in global pandemic preparedness plan in Paris, Hongkong and Uganda. He became speaker in many international conference in dermatology venerology, aviation medicine, military medicine, natural disaster and global health security.

BG. Alexander K. Ginting S., dr., Sp.P., FCCP.

Brigadier General Alexander Ginting is the Chairman of Medical Committee, as well as the Chairman of Research Committee, and Chairman of advisory agency in Gatot Subroto Army Hospital. He graduated from Medical Faculty Universitas Sumatera Utara in 1987, and continued his specialties of Pulmonology in Universitas Indonesia. Within the same year, he also joined the Voluntary Military Officer School. BG Alexander Ginting received several training and education abroad such as Lung-oncologist fellowship in Rotterdam (2000), CHEST Annual meeting in Philadelphia (2001), Medrete US PACOM in Vanuatu (2003), International Association for the Study of Lung Cancer (IASLC) in Vancouver (2005), HIV AIDS US AFRIMS in Bangkok (2006), DOTS TB Course by WHO in Manila (2006), Avian Influenza US PACOM in Bangkok (2007), HIV AIDS Course ASHM in Sydney (2007), Pandemic Influenza USAID WFP in Roma (2009), European Respiratory Society Congress in Barcelona (2010) and in Vienna (2012), Senior Leader Asean Military Medicine in Bangkok (2015), NATO Health Security in Hamburg (2015), and many more.

Prof. Dr. Srivicha Krudsood

Dr. Srivicha Krudsood is a Professor in the Department of Tropical Hydiene. She obtained her Doctor of Medicine degree from Far Eastern University, Philippines, and M.Sc. and Ph.D. in Clinical Tropical Medicine from Mahidol University, Thailand. She holds diplomas in Tropical Medicine and Hygiene from the Thai Board in Interna; Medicine at Mahidol University and from Thai Medical Council, respectively. Dr. Srivicha is an authority on national policies and strategies for treatment and elimination of malaria in Thailand. She also an established malariologist, specializing in malaria treatment studies, with extensive experience in conducting anti-malaria clinical drug trials. Currently, she involved with the pharmaceutical development of the FDA-Approved drug tafenoquine, a 3-day-dose radical cure for vivax malaria. Dr. Srivicha is a renowed expert in the clinical management of malaria, providing consultancy services that inform and influence Thai national malaria policy.

Asc. Prof. Dr. Usa Boonyuen

Dr. Usa Boonyuen is the Assistant Dean for International Relations Faculty of Tropical Medicine, Mahidol University as well as Associate Professor of Biochemistry Department of Molecular Tropical Medicine and Genetics Faculty of Tropical Medicine, Mahidol University. Her specialities research interest and expertise were Enzymology: functional characterization of G6PD variants, Molecular diagnosis of G6PD deficiency, and Functional and structural characterization of proteins related to tropical diseases.

Dr. Rapatbhorn Patrapuvich

Dr. Patrapuvicj has a background in malaria genetics and malaria pharmacology, including training in two laboratories: BIOTEC, in Bangkok, Thailand and the University of Washington in Seattle. These laboratories discovered new antimalarial drugs, P218 and DSM265, respectively. P218 is now at the pre-clinical stage and DSM265 is in a Phase II clinical trial. In these labs, we focused on applying functional genomic tools to understand drug responses and resistance mechanisms in malaria parasites. After the postdoctoral training in the US, Dr. Patrapuvich joined Mahidol University, Thailand in 2012 as a lead scientist of a liver-stage lab at Mahidol Vivax Research Unit (MVRU). At MVRU, she successfully developed a novel *in vitro P. vivax* liver stage model, which is currently utilized for screening of anti-liver stage compounds provided by the Medicines for Malaria Venture in high throughput formats. In 2017, Dr. Patrapuvich was appointed as a head and principle investigator of the newly established "Drug Research Unit for Malaria (DRUM)" at Mahidol University. Her research interest focuses on the discovery and development of new antimalarial drugs.

Laksma TNI Arie Zakaria, dr., Sp.OT., Sp.KL., FICS

First Admiral Arie Zakaria joint Indonesian Navy through Military Duty Officers School 1987 after graduation from Faculty of Medicine, University of Indonesia, Jakarta. He started as Navy Doctor with ranked First Lieutenant in Biak Naval Hospital, Papua. After tour of duty around Indonesia, He was sending back to University of Indonesia to become Orthopedic Surgeon, and finished in 1998. Then he was assigned to many conflicts and disaster area both inside and outside of Indonesia. After graduation from Naval Command and Staff College in 2003, he was assigned to Eastern Fleet Command, and Marine Corps. In 2016, he became the Chief of Naval Medicine Institute of Indonesia Navy at Surabaya. Since March 2017 He became Director of Health in Ministry of Defense Republic of Indonesia

MG. Dr. dr. Tugas Ratmono, Sp.S.

DR. dr. Tugas Ratmono, Sp.S., M.A.R.S., M.H is the Chief of Army Health Center. He graduated from Medical Faculty in University of Indonesia 1990, and continued his specialties of Neurology in 2002. He joined the Voluntary Military Officer School in 1989. He finished his Doctoral study in 2016.

Prof. Dr. Kuntaman, dr., MS., Sp.MK(K)

Dr. Kuntaman is Professor in Department of Medical Microbiology, Faculty of Medicine Universitas Airlangga, as well as the Chairman of The Indonesian Society for Clinical

Microbiology and Advisory Boards of National Committee of Program on Antimicrobial Resistance: Prevalence and Prevention, Ministry of Health Republic Indonesia, since 2015 and Advisory Boards of Antimicrobial Resistance Control Program, Dr. Soetomo Hospital Surabaya, since 2015. He graduated as Medical Doctor from Faculty of Medicine Universitas Airlangga in 1978 and Master of Science in 1987, and continued his specialties of Clinical Microbiology in Universitas Indonesia. He continued Doctoral Program in 1999 in Universitas Airlangga and Post-doctoral Program in Erasmus University Medical Center, Rotterdam in 2003. His research interest are bacteriology, antimicrobial resistance including Extended Spectrum Beta Lactamase (ESBL) Producing bacteria, Carbapenem Resistance Enterobacteriaceae (CRE), Methicillin Resistant Staphylococcus aureus (MRSA) and Multiple Drug Resistance Micro-organisms (MDRO). He is also interested in infectious disease such as sepsis and fever study.

Prof. Simo Nikkari, MD., Ph.D.

Prof. Nikkari is the Director and Professor at the Centre for Military Medicine since 2010, and has lead/co-lead the Centre for Biothreat Preparedness (BUOS) since its establishment in 2005. BUOS is a centre for excellence between the Finnish Defense Forces and the National Institute for Health and Welfare. Prof. Simo is an MD board –certified in clinical microbiology and medical administration. He received his PhD in 1994 from the Departments of Medical Microbiology and Medicine, University of Turku and has been permanent faculty since 1997. He was invited as Postdoctoral Fellow and Visiting Assistant Professor at Stanford University, CA, USA 1998 – 2001 in the Departments of Microbiology and Immunology as well as Medicine (Division of Infectious Diseases), respectively. He continued as the first CEO/CSO of the biotechnology company Mobidiag in 2001 - 2005. His scientific work has focused on the development of molecular methodologies to study the etiology of infectious and chronic idiopathic diseases, particularly those caused by micro-organisms that are difficult or impossible to identify using classic microbiological methodologies. He is the author of over ninety original, peer-reviewed scientific publications and the writer of numerous reviews and book chapters, as well as having four patents. Prof. Simo has been Principal Investigator of several commercial, scientific and other projects. Recently, his work has focused on biological defense against selected agents. His most current scientific projects deal with monitoring biothreat agents in Scandinavia, as well as biosecurity capacity building in Tanzania. Professor Simo Nikkari is a nationally and internationally acclaimed expert lecturer in Health Security preparedness.

Prof. Tomoyoshi Nozaki, MD., Ph.D.

For the past 20 years of his carrier, Prof. Tomoyoshi Nozaki has been mainly working on two aspects of infections caused by Entamoeba histolytica. He has been nicely dissecting the virulence mechanisms at the molecular level, mainly focusing on vesicular trafficking, trogocytosis, phagocytosis, and secretion of cytolytic factors. He is interested in drug development against parasitic diseases and has been working on metabolisms of essential biomolecules such as sulfur-containing amino acids and coenzyme A in this parasite, which led to identification of a few lines of new chemotherapeutics against amebic infection. He is also working on the unique evolution

of the mitochondrion-related organelles in Entamoeba. His interests in drug development have been recently extended to cover malaria, trypanosomiasis, leishmaniasis, and tuberculosis. Since 2017, Prof. Tomoyoshi Nozaki has been appointed as Professor, Department of Biomedical Chemistry (School of International Health) Graduate School of
Medicine, The University of Tokyo.

Prof. Maria Inge Lusida, dr., M.Kes., PhD., Sp.MK(K)

Prof. Inge is the Director of Intitute of Tropical Diseases, Universitas Airlangga. She graduated from Medical Doctor at Universitas Airlangga, Surabaya, Indonesia and finished her Ph.D. in Virology at Kobe University, Kobe, Japan. Her research interest are mainly focus on HBV, HCV, molecular epidemiology, medicinal plants, viral diarrhea.

Prof. Dr. Wayan Tunas Artama, drh.

Prof. Wayan has research interest in One Health Approaches and Molecular Biotechnology related to Zoonotic Diseases. Indonesia is an archipelago that recognized as one of the world largest mega biodiversity country with more than 13,000 islands which are facing a lot of zoonotic diseases, emerging and re-emerging diseases, that most of the diseases are recognized as an animal origin and 75 % of them are wildlife origin. Managing for sustainable ecosystem, biodiversity and zoonotic diseases in such county like Indonesia need an ecosystem approaches which is support by system thinking, trans-disciplinary, participatory, gender and social equity, sustainability, and knowledge into action. I finished my PhD from Free University Berlin, Germany on Biochemistry and Biotechnology, giving lecture on Biochemistry, Molecular Biotechnology at Faculty of Veterinary Medicine, and also Molecular Biology of Tropical Diseases and One Health, at Medical School Universitas Gadjah Mada. He has training experiences on One Health and Environmental Literacy at Tuft University, Boston and Public Health training at University of Minnesota. Now he is in charge as a Coordinator of One Health Collaborating Center-UGM (OHCC-UGM) that their activities supported by Working Group from 16 research members, from 10 faculties within UGM (Vet. Medicine, Medicine, Animal Science, Forestry, Geography, Biology, Anthropology, Agriculture, Agriculture Technology and Social & Politic). His working group actively involved in many international activities on EcoHealth/One Health in the area of capacity building, curriculum development, EIDs research activities and community empowerment

Dr. Imran Pambudi, MPHM.

Dr. Imran Pambudi started his carrier in 1999 as the medical doctor in Sampang District. Within the following years, he focused on the Mother and Child Health Programs. In 2016 unti 2018, he became the Deputi Director of Multi-Lateral Health Cooperation, International Cooperation Bureau Ministry of Health. Currently, Dr. Imam Pambudi is the Deputy Director of Tuberculosis, Ministry of Health. His research interest and expertise are in Operational research on Quality

Improvement and Mother-Child Health expert and Global Health expert especially on Health security.

Prof. Dr. Fedik Abdul Rantam, drh.

Prof. Fedik Abdul Rantam is a professor in Virology and Immunology, Dep. Microbiology, Faculty of Veterinary Medicine, and *Advisor boards Stem Cell Research and Development* Universitas Airlangga, as well as RSUD. Dr. Soetomo Teaching Hospital. He is also the Chairman of Research and Technology of *Surabaya Regenerative and Stem Cell Center*. Prof. Fedik as the lecturer of under graduate and post Graduate student at Univeritas Airlangga, and his research interest focus on *Stem Cell* , Vaccine, and Wild Infection Diseases. At the moment, Prof. Fedik is the Vice Dean Faculty of Veterinary Medicine (in Academic and Student Affairs) Airlangga University, the Chairman of Airlangga *Disease Prevention and Research Center* (ADPRC), the Coordinator of One Health Collaborating Center (OHCC) University of Airlangga and the Vice President of *Indonesian Society for Microbiology* (PERMI).

Prof. Dr. Achmad Fuad Hafid, MS., Apt.

Prof. Dr. Achmad Fuad Hafid, M.S., Apt. is the Professor of Phytochemistry at Faculty of Pharmacy, Airlangga University as well as Vice director of Institute of Tropical Disease, Airlangga University. He graduated his bachelor degree in faculty of pharmacy, Airlangga University, Surabaya, Indonesia on 1980. In 1983 he continue his master degree and in 2007 finished his Doctoral degree in Airlangga Univesity. His research interest is in Isolation, phytopharmaceutical product development as antimalaria, anti HCV and anti amoeba, analgesic and antipiretic from natural products. He has published research papers about phytopharmaceutical product development of antimalarial, anti HCV, analgesic and antipiretic drugs from natural products. He also has registered 6 patent of formula and standardized herbal product of antimalarial drugs from natural products.

Prof. Dr. H. Eddy Bagus Warsito, dr., MS., Sp.MK(K)

Since 2011, Prof. Eddy Bagus Warsito is the head of Clinical Microbiology Unit in Soetomo General Academic Hospital, as well as the Chairman of Health Research Ethic Committee Faculty of Medicine Universitas Airlangga, and the Coordinator of Clinical Microbiology Specialist Program Faculty of Medicine Universitas Airlangga. His research interest and expertise are in pathogenic mechanism of microorganism. Within this year, several papers has been submitted based on research on specific microorganism such as *Shigella flexneri*, *Eschericia coli* in Emerging Antibiotic Resistance, and antimicrobial activity of *Streptomyces sp*.

---PLENARY LECTURES---

-PL1-

Biological Threat Reduction in the Asia-Pacific Region

Emily S. Kelley

Defense Threat Reduction Agency (DTRA) Biological Threat Reduction Program

*Presenting author
Email: emily.s.kelley2.civ@mail.mil, Phone: +15716165984

ABSTRACT

The Defense Threat Reduction Agency's (DTRA) Biological Threat Reduction Program (BTRP) recognizes the danger to U.S. and global health security posed by the risk of outbreaks of dangerous infectious diseases. Whether natural, accidental, or man- made, disease outbreaks pose a risk to the global community. BTRP strives to address these risks by promoting best practices in biological security and safety, improving partner countries' capacities to safely and rapidly detect and report dangerous infections, and establishing and enhancing international research partnerships around the globe. BTRP's engagements are closely aligned with international frameworks such as the Global Health Security Agenda (GHSA) to ensure that partners are equipped with streamlined, sustainable practices common across the international health community. BTRP leverages international best practices in training and capability-building cooperative partnerships to strengthen partner nation civilian, military and animal health system capacities across the Asia-Pacific Region, as well as to foster networks focused on countering biological threats.

Keywords: *biological threat reduction, biosecurity, biosafety, biosurveillance, international cooperation*

-PL2-

Pathways for Translating Infectious Disease Research into Diagnostic and Therapeutic Products

Mark David Lim*

[1]*Global Public Health Programs, American Society for Microbiology, Washington DC, 20036, United States of America*

*Presenting author
Email: mlim@asmusa.org, Phone: +12029429306

ABSTRACT

The scientific and commercialization challenges for developing diagnostics and therapeutics for routine civilian healthcare are amplified in the midst of emerging or re-emerging infectious diseases. This discussion will describe standardized diagnostic and therapeutic product development processes, share differences for developing medical countermeasures, and highlight unique collaborations aiming to accelerate access to these products.

Keywords: *Product development, commercialization*

-PL3-

The Urgency of Laboratory Biological Risk Management National Policy in Indonesia

Wiku Adisasmito[1*], Agus Setiawan[2]

[1]*Department of Health Policy and Administration, Faculty of Public Health, Universitas Indonesia, Depok 16424;*[2]*Indonesia One Health University Network, Depok, Faculty of Public Health, Universitas Indonesia, Depok 16424*

*Presenting author
Email: wiku.adisasmito@gmail.com, Phone: +6221 2930 2084

ABSTRACT

Background: Indonesia has thousands of life science laboratories spread across various ministries, institutions, and private parties. Laboratory is work and store pathogenic biological substances and toxins that can cause health problems. To minimize the impacts, major challenge must be overcome to prevent the Dual Use Research of Concern (DURC), bio-crime, and bioterrorism action. Given these concerns, Indonesia One Health University Network (INDOHUN) in collaboration with Tufts University is establishing One Health Laboratory Network to promote safe, secure handling and effective disease control by promoting the implementation of bio-risk management.
Objective: The aims of the network is to link potential university laboratories with Government Laboratories, targeting specific potential bioterrorism pathogen to enhance rapid detection, secure handling and storage, and upgrade biosafety and biosecurity practices and laboratory standards.
Methods: Laboratory member was mapped and selected based on biosafety level (BSL), facility and equipment, laboratory performance, human resource, and collaboration score using basic standardize questionnaire.
Results: The network has conducted biological risk mapping in 64 university life-science laboratory and use the finding to developed several rector regulations. 28% of labs are BSL-1 and 5% are BSL-3. 56% work with risk group 2, 14% work with risk group 3. Most of the labs (85.5%) have no official biosafety officer. 78% labs have never conducted risk-assessment, 44% labs have no waste management system, and 89% has no personnel health monitoring system. For biosecurity issue, labs that have biological agent inventory system is just 40%, and 78% has no biological agent data inventory system. Related to the bio-risk audit and review, 93% labs have no IBC. Many biological materials in these laboratories have been created, modified, and stored, require safety procedures to keep the negative effects on humans and the environment as low as possible.
Conclusion: Strong support and advocation to national institution's policy maker, laboratory human resource, infrastructure and facility is the major issues that need to be improved in the near future.

Keywords: *Bio-risk management, DURC, Laboratory Network, One Health*

-PL4-

Global Health Security Civil Military Coordination Indonesian Perspective

Iwan Trihapsoro

Indonesian Armed Forces, TNI Surgeon General Office, Mabes TNI, Cilangkap, Jakarta

*Presenting author
Email: iwantrihapsoro@hotmail.com

ABSTRACT

The year of 2018 marks the 100th anniversary of the 1918 flu pandemic, which caused 50-100 million deaths, more than World War I & II casualties. A century later, are we better prepared to overcome infectious disease threats? According to the Time Magazine, the world is not ready for the next pandemic. The reason is we live in a world that is hyperconnected and rife with hyperinfectious diseases. WHO has release 10 threats to global health in 2019 and top 10 pathogens that pose greatest risk to public health in 2018 including Disease X which is unknown to cause human disease. The tools to face the global threats are WHO IHR 2005, GHSA with its 11 action packages and WHO JEE.

Acoording to 2016 Indonesia Defense Force White Paper the non traditional threat such as epidemic diseases will be great threat. It has biological, economy, social, security, defense and political impact. Indonesia has a Civil Military Coordination mechanism in biological disaster escalation with national health and security approach. TNI medical services as part of the national health system have a medical capacities and capabilities in supporting global health security. Indonesia also has several regulations on the prevention of bioterrorism. Indonesia has a significant role in global health security by became a chairman of GHSA in 2016 and conducted capacity building preparedness for the global pandemic by table top exercise and field exercices.

In 2017-2018 Indonesia experienced two extraordinary diphtheria & measles outbreak. An integrated health team to respond to the crisis has been made from the Ministry of Health, Indonesian National Armed Forces and the Province Health Office. The team was equipped with medicine, vaccines, medical equipment and nutritious food.

As conclusion, global cooperation, collaboration and investment are necessary to ensure a safer future. This means a multisectoral approach to managing the problem of global disease that includes governments, industry, public and private financiers, academia, international organizations and civil society, all of whom have responsibilities for building global public health security.

Keywords: *global health security, civil military coordination, multisectoral approach*

-PL5-

-PL6-

Military Medicine Role in Managing National Defense Threats

Arie Zakaria

Orthopedic Surgeon, Director of Health Directorate General of Defense Strength of Ministry of Defense

*Presenting author
Email: arie.zakaria@yahoo.co.id

ABSTRACT

Indonesia is an archipelagic country with 17,504 islands and a very strategic position between two continents and two oceans and is in the path of international trade traffic. As a tropical country, Indonesia has a wealth of flora and fauna as a natural resource (biodiversity), that useful for health, and at the same time a threat to public health. Indonesia also located on four moving Tectonic Plates and Ring of Fire that make Indonesia as Disaster Supermarket.
Indonesian defense is the total defense, whose organization is built on awareness of the rights and duties of all citizens and belief in their own power to maintain the survival of an independent and sovereign nation and state of Indonesia. The threat of national defense derived from biological agents is expressed as a real threat because it has the potential to cause an epidemic that could threaten the health of plants, animals and humans, which can cause economic harm, human health problem and disrupt the security of the country. Another real threat is natural disaster. This threat required comprehensive countermeasures ranging from preventive, detection and emergency measures with the collaboration between Military Medicine and Civilian health system.
Indonesia as a member country of the United Nations has agreed to implement the provisions of International Health Regulations (IHR) 2005 and had involved in Global Health Security Agenda. Indonesia is required to have the ability in the prevention, early detection and rapid response to the emergence of diseases or events that potentially cause public health emergencies that disturb the world by collaboration Military Medicine and Civilian health system. This collaboration was the role of military medicine to serving people in needs and strengthens National Defense.

-PL7-

Global Partnerships for Biological Threat Reduction

Jason Rao[1,2*]

[1]*Health Security Partners, Washington DC 20009;* [2]*Cornell University*

*Presenting author
Email: jason@healthsecuritypartners.com, Phone: +1202-538-4508

ABSTRACT

Background: The evolution of national security measures to reduce biological threats has led to a convergence of public health and defense interests. The U.S. Cooperative Threat Reduction (CTR) programs are a model for global partnerships for mutually beneficial health security interests.

Objective: Demonstrate the effectiveness of partnership through CTR programs globally.

Methods: Case studies will be presented illustrating science and diplomacy is at the core of CTR programs.

Conclusion: CTR is a platform for global partnerships to achieve mutually beneficial health security interests, with science and diplomacy being fundamental factors to success.

Keywords: *Global Health Security, Diplomacy, Biological Threat Reduction*.

-PL8-

Biothreat Management

Tugas Ratmono, Sp.S

Chief of Army Health Center

*Presenting author
Email:. tugas_ratmono139@yahoo.com

ABSTRACT

Indonesia's geographical, geological and demographic position is in disaster prone area and has the potential facing biological threats, spreading of biological agents-include the use of biological weapons, that can cause outbreaks and threaten national security. Indonesia had experiences of outbreak, such as the flu avian incident, poliomyelitis and measles, that threaten humans and animal welfare and effected on health, economic and environmental aspects.

Biothreat management in Indonesia involve many ministries and agency. Ministry of Health, Ministry of Agriculture, Ministry of Research and Technology and Higher Education, Ministry of Defense, and Indonesian Armed Forces are the main actors on Biothreat Management. Management of infectious diseases in Indonesia is carried out based on the status of the outbreak situation that determined by the Indonesian Ministry of Health and Local Government in accordance with applicable regulations (Minister of Defense regulations No. 5/2015).

Biothreat management approach has paradigm as disaster management. It is Civilian Government Business and Army Health Service as part of Indonesian National Health System has role to support the management process. Army Health Service should develop cooperation, coordination and interoperability with other health institutions. All assets and capability of Army Health Service, which are held from national level until military area command, can mobilized to support Indonesia Ministry of Health in disease outbreak prevention operation.

Army Health Service has 4 strategies to improve their preparedness and capability on biothreat management. The strategies are improving human resources, developing organizational, developing army bio-vaccine and BSL-3, also meets the need of medical device, personal protective equipment.

-PL9-

The Threat of Infectious Diseases in the Era of Antimicrobial Resistance

K. Kuntaman

Department of Microbiology, Faculty of Medicine, Universitas Airlangga; Institute of Tropical Disease, Universitas Airlangga; Dr. Soetomo Hospital Surabaya; Indonesian Society for Clinical Microbiology

*Presenting Author
Email: kuntaman@fk.unair.ac.id

Introduction

Antimicrobial resistance (AMR) has been included as the important priority in health, since mortality and morbidity increasing correlated with economic burden. The Indonesian health services, without having the structured policy and planning on control of AMR we will fall in the post antibiotic era, in which no any antibiotic effective again in daily practices in infection management. The costly and not secure health services will be prone to the reality, it means the patient safety will be challenging.

The study of ESBL producing bacteria in three cities in East Java showed that were only 4 antibiotics that effective against ESBL producing bacteria. The ESBL producing bacteria continuously increasing ranged 50% up to 82%. It means that Indonesia has a big problem on AMR.

Antibiotic use in emergency was commonly selected the strongest antibiotic by health practitioner such as carbapenem, and some time combination. There was claimed that combination antibiotic had a greater cure rate is not fully proved. The recent big issue is the emergence of the carbapenem resistant pathogens that indicate we have arrived in the era of no antibiotic choices.

Do we arrive in the threatening AMR era

The study in Surabaya (2015) showed that among 1082 Gram negative urinary clinical isolates were detected 116 (10.7%) carbapenem resistant strains. Among 22 isolates were carbapenemase producer (CP), in which 12 strains were non-lactose fermenter bacterial agents that only sensitive against colistin. Colistin is not available in national formulary at this moment. It means that all patients that infected with CP (Carbapenemase producer) non-fermenter bacterial pathogens were not any choices of antibiotics to treat them, as we call post-antibiotic era. The average of length of stay (ALoS) among patients that infected by CP-Gram negative bacilli (CP-GNB) was 39.5 days, that absolutely higher rather than the average ALoS in this hospital of 7.68 days.

Among these 22 patients, only 3 patients consumed carbapenem in this hospital. We know that this tertiary referral hospital got the patients from secondary referral hospital. It was not identified the antibiotic used in the secondary hospital, that in the future program should be included in the program of AMR control and prevention. Interestingly 4 (18.2%) of these pathogens harboring ESBL gene. It means that both (Carbapenemase & ESBL) of genes would be co-transmission among pathogens, that will increase the problem.

The recent data of Carbapenem resistant bacteria (CRB) in Dr. Soetomo hospital 2018 showed that 4 most prevalent bacteria among 136 isolates with CRB were *Acinetobacter baumannii* (36; 26.5%), *Klebsiella pneumoniae* (23; 16.9%), *Escherichia coli* (19; 14%), *Pseudomonas aeruginosa* (15; 11%) and *Stenotrophomonas maltophilia* (11; 8.1%).

Conclusion

The era of AMR need all health practitioners to improve the strategy of antibiotic usage. The AMR is increasing, and in any centers have arrived in the era of no antibiotic choices. The carbapenem resistant pathogens are the alarming issue for arriving in the era of no antibiotic choices, that threat the patients safety, and costly.

-PL10-

-PL11-

Global Bio-threat Reduction through One Health Collaboration - Finnish Perspectives

Simo Nikkari

Centres for Biothreat Preparedness and for Military Medicine,
Tukholmankatu 8A, FI-00290 Helsinki, Finland

*Presenting author
Email: simo.nikkari@mil.fi, Phone: +358 299 800

ABSTRACT

The need to strengthen national capacity for health risks is an integral part of the UN Agenda 2030 and linked to major global processes. Countries need to have the capability to prevent, detect and respond to all hazards regardless of their cause. This is underlined by the WHO International Health Regulations (IHR 2005), the OIE Performance of Veterinary Services (PVS), the commitments made through the Sendai Framework for Disaster Risk Reduction, the Global Partnership against the Spread of Weapons and Materials of Mass Destruction (GP) and the Biological and Toxin Weapons Convention (BTWC), among others.

Health security and biothreat reduction are primarily based on actions that take place at the national level, including the farthest villages and remote areas. Additionally, it is clear that the international community needs to work further to tackle the present threats, and that a much broader One Health approach, including civilian-military collaboration, and high-level commitment to secure implementation are needed.

In Finland, the Centre for Biothreat Preparedness (BUOS) was established in 2005. The Centre combines scientific and laboratory know-how on biological defence, as well as on biothreat assessment and preparedness between the National Institute for Health and Welfare (THL) and the Finnish Defence Forces (FDF) under guidance of the respective ministries. In line with the One Health approach and the Security Strategy for Society 2017, in 2019 the Finnish Food Authority under the Ministry of Agriculture and Forestry joined BUOS, as recommended by the 2017 WHO Joint External Evaluation (JEE) of Finland. The Security Strategy for Society 2017 is a comprehensive Government resolution which harmonises national preparedness principles and guides preparedness by a Whole of Society approach for comprehensive security.

The Global Health Security Agenda (GHSA), launched in 2014 and extended until 2024, is a global collaborative effort to boost country capacities. It builds on concrete commitments to work intersectorally on defined areas of action. Receiving reliable information and feedback on the strengths and weaknesses of health security systems is essential for their further development. Parallel to the OIE PVS Pathways, the Joint External Evaluations (JEEs) coordinated by WHO have become an important part of the process for countries to map the current status of their capacity to prevent, detect and respond to health threats. It is remarkable that since February 2016 over 100 JEEs have now been completed, in addition to the six external GHSA assessments performed in 2015.

In 2016, Finland led the establishment of the JEE Alliance (2019 re-named Alliance for Health Security Cooperation) to facilitate collaboration among stakeholders involved in building health security according to the One Health approach. To date, over 70 countries and organizations have joined this network. FAO, OIE, WHO and the World Bank serve as permanent members of the Advisory Group, which is co-chaired by Finland and Australia.

-PL12-

Plasmodium Genotyping Studies in Indonesia: the Views on Its Application in Support to Malaria Elimination Program

Rintis Noviyanti[1*], Leily Trianty[1], Agatha Mia Puspitasari[1], Farah Coutrier[1], Retno Ayu Setya Utami[1], Nadia Fadila[1], Jutta Marfurt[2], Sarah Auburn[2], Ric Price[2], Hidayat Trimarsanto[1]

[1]*Eijkman Institute for Molecular Biology, Jakarta, Indonesia*
[2]*Menzies School of Health Research, Darwin, Australia*

*Presenting author
Email: rintis@eijkman.go.id

ABSTRACT

Advanced genetics study of malaria parasites has provided huge advantages over the conventional methods in detecting different parasite populations. Population structures of malaria parasites, in particular *Plasmodium falciparum* and *P. vivax* have been studied in various countries. The results have been useful to provide insights on various parasite types worldwide.

In the era of malaria elimination, from which Indonesia has set out the time in 2030, we have been able to work intensively to map Indonesian parasites using current genetic tools. Microsatellite genotyping of *Plasmodium* sp. has been used to detect distinct parasite population across malaria endemic areas in Indonesia. Using similar tools, we have applied this technique to study the efficacy of anti-malaria drugs.

The more advanced studies employing next generation sequencing are currently ongoing. Current findings on whole genome sequencing of the two major malaria parasites, *P. falciparum* and *P. vivax* have shown their distinct clusters compared to worldwide parasite isolates. The information gathered on these two species were used to further develop unique geographical markers to identify parasite origins as well as differentiating between imported and local strains.

More studies are in progress to help finding the best markers and effective methods applicable to support malaria elimination program in this country.

-PL13-

Drug Development against Tropical Diseases Using Indonesian Bio-Resources

Tomo Nozaki[1*]

[1]*Department of Biomedical Chemistry, Graduate School of Medicine, The University of Tokyo*

*Presenting author
Email: nozaki@m.u-tokyo.ac.jp

ABSTRACT

Parasitic diseases have tremendous negative impact on social and economical development of developing countries. We have been engaged with a JICA/AMED-supported project (Science and Technology Research Partnership for Sustainable Development, SATREPS) on drug discovery of anti-malarial and anti-amebic compounds from natural microorganisms from Indonesia. I will give a biref overview of our strategies and outcomes so far of the project.

Keywords: *Parasitic diseases. NTD, drug*

-PL14-

Viral Diarrhea in Indonesia: Molecular Epidemiology, Genetic Diversity of Rota and Noroviruses

Maria I. Lusida[1]*

[1]*Institute of Tropical Disease, Universitas Airlangga, Surabaya 60115, Indonesia*

*Presenting author
Email: ingelusida@itd.unair.ac.id

ABSTRACT

Diarrhea is the third leading cause of overall morbidity and the leading cause of infant mortality in Indonesia.

Study on Rotavirus A (RVA) among children in Surabaya in 2015-2016 showed that 31.3% (42/134) were RVA antigen-positive. All of RVA positive-sample tested showed the unusual combinations of G3P[8] (n=36) and G3P[6] (n=3). Whole genome analysis by next-generation sequencing (NGS) performed for 11 strains to determine the RVA genotypes will be presented. We continued to perform the molecular epidemiological analysis of RVA infection among pediatric patients until 2018. A total of 432 stool samples were collected from hospitalized pediatric patients with acute gastroenteritis. The overall prevalence of RVA infection was 31.7% (137/432), and RVA infection was significantly more prevalent in the 6- to 11-month age group than in the other age groups ($P < 0.05$). Interestingly, the equine-like strains were exclusively detected until May 2017, but in July 2017 they were completely replaced by a typical human genotype (G1 and G3). The clinical manifestations among infants and children will also be discussed. Indonesia has not included rotavirus vaccination in its national immunization program, so that vaccines are only available through the private market. Our study on rotavirus cases in post-vaccinated children will be presented. Besides, we also detected and analyzed Norovirus (NoV), which is also as one of the prominent cause of non-bacterial gastroenteritis.

Conclusion: Our longitudinal epidemiologic study from 2015 to 2019 found that RVA has been a major cause of acute gastroenteritis in Indonesian children with a dynamic genotype changes overtime. NoV infection, even has lower prevalent, but still common among children and adults, also with dynamic genotype changes.

Keywords: *Diarrhea, Rotavirus, Norovirus, genotypes, Indonesia.*

-PL15-

Role of Wildlife in Disease Transmission and implementation One Health Approches in Controling EIDs

Wayan T. Artama[*1,2], Putu Cri Devischa G[1], Khesara Sastrin PN[1], Hery Wijayanto[1,2]

[1]*One Health Collaborating Center, Universitas Gadjah Mada, Yogyakarta 55281*
[2]*Faculty of Veterinary Medicine, Universitas Gadjah Mada, Yogaykarta 55281*

*Presenting author
Email: artama@ugm.ac.id Phone: +62816686274

ABSTRACT

Background: Indonesia is the world's third most forested country after the Democratic Republic of Congo and Brazil, with total 126 million hectares of forest. We have 12%, 16%, and 17% of world's mammals, reptiles, and birds respectively which most of them are living in rural area. In the other hand, wildlife has been a critical source for zoonotic disease transmission throughout history, especially in Indonesia. Zoonotic diseases and emerging infectious diseases (EIDs) are diseases spread between human and animal, and nowadays it remains a major threat for public health in Asia. There are around 71.8% of total zoonotic disease occurred around the world are originated from wildlife, such as Bubonic plague, rabies, tuberculosis, cryptosporidiosis, and many more. There are several ways for these diseases can be spread, such as direct contact, contaminated food and water, and the presence of the vector.

Objective: Monitoring and identifying zoonotic pathogen in wildlife

Methods: Wildlife survey and blood sample collection were done from bats, rats, and other animals. DNA samples were isolated and amplified based on specific primer using PCR. The results from PCR then were sequenced and BLAST against the database.

Results: Several virus and bacteria were identified in wildlife animal, including leptospira sp, pasteurella, hendra virus, rift valey fever virus, and others.

Conclusion: One health is a key to tackle the zoonotic disease outbreak. It is an approach to designing and implementing programs, policies, legislation and research in which multiple sectors communicate and work together to achieve better public health outcomes

Keywords: *wildlife, emerging infectious disease, zoonoses, one health*

-PL16-

Center of Excellence (CoE) of Tuberculosis for Mobilizing Resources to End TB 2030

Imran Pambudi

National TB Program Manager, Indonesia MoH

*Presenting author
Email: imran,pambudi@kemkes.go.id, Phone: +628118342000

ABSTRACT

Background: Although Tuberculosis is a preventable and treatable disease, until today it is still considered as a critical challenge and belongs to one of the leading communicable disease causes of death in the world. It kills more than five thousand children, women and men each day and leaves no country untouched. It is one of the leading killers among people of working age which creates and reinforces a cycle of ill-health and poverty, with potential catastrophic social and economic consequences for families, communities, and countries. Tuberculosis (TB) continues to be a one of the main health problems in the world. Globally, out of the 10 million people who feel ill with in 2017, only 6.4 million were detected and notified while the other 3.6 million TB cases were undetected and not reported.

Objective: Developing innovations in tuberculosis control and education and consistently seeks new perspectives and approaches for TB training and education.

Methods: CoE creates, enhances and disseminates state-of-the-art resources and models of excellence and performs research to control and eliminate tuberculosis. Committed to develop and deliver highly versatile, culturally appropriate trainings and educational products, and provide technical assistance.

Conclusion: The importance of CoE development in achieving 2030 targets of the WHO End TB Strategy.

Keywords: *Quality, innovations, culturraly appropriate, TB*

-PL17-

One Health City 4.0 for Elimination and Prevention New Infectious Disease

Fedik A. Rantam[1*]

[1]*Airlangga Disease Prevention and Research Center (ADPRC)-One Health Collaborating Center (OHCC)-Airlangga University*

*Presenting author
Email: fedik.ar@gmail.com

ABSTRACT

One health is an integral part of human health, animal health, and environmental health. This was developed especially in sharing knowledge that is interconnection with multidisciplinary to solve problems related to global problems. Meanwhile, one health city is Scientifics knowledge in humans, animals, the environment to treat and prevent zoonotic diseases or infectious diseases in the city so that they can be solved holistically and multidisciplinary. Or it is a problem solving model of all the things that are global challenges related to health. These include food security, global influenza, zoonosis and animal-human ecosystem interfaces, antimicrobial resistance and translational medicine. Another approach is to implement programs, regulations, legislation and research in a multidisciplinary manner, multisector and work together to create better health. Especially in the approach to diseases that can spread between animals and humans or human diseases and vice versa from humans to animals such as global influenza, In the strategy of eliminating the disease can produce a good outcome if a comprehensive approach is carried out by activating one health system and utilizing the industrial revolution 4.0 or utilizing big data to create an integrated information model in solving a problem in health.

Key words: *one health city, elimination, prevention, zoonosis (animal, human, environment).*

-PL18-

Indonesian Biodiversity: The Strategy to Discover an Alternative Drug for Anti-Infectious Diseases

Achmad Fuad Hafid[1,2*]

[1]*Faculty of Pharmacy, Universitas Airlangga, Surabaya, 60115, Indonesia*
[2]*Natural Product Medicine Research and Development, Institute of Tropical Disease, Universitas Airlangga, Surabaya, 60115, Indonesia*

*Presenting author
Email: achmadfuad@ff.unair.ac.id, Phone: +628121644180

ABSTRACT

Infectious disease prevalence is remains high worldwide. Currently available treatments face a number of disadvantages, either in the form of limited access to treatment due to expensive medical costs, drug resistance or unpleasant side effects of drug. These challenges encourage the discovery of alternative drugs which is better in terms of efficacy, safety and cost.
Indonesia is one of megadiverse country in the world which blessed with tremendous natural products. Throughout ages nature had become source of drugs. Many advantages drugs developed from natural products. Hence, Indonesia provides potential nature resources to be explored as new alternative drugs for anti-infectious disease.
Development of alternative drugs begins with ethnomedicine approach whereas Indonesia had a long history in usage of herbal for traditional medication. This approach will reduce time consume, toxicity occurence and provide promising candidates for drug discovery. Further identification of active compounds need to be done, for instance by bioassay guided isolation. Those active compounds are important as leads for combinatorial synthesis in which the compounds structure can be utilized as the central synthetic scaffold.
Several research were conducted to discover anti-infectious drugs, especially related to malarial, Hepatitis C Virus (HCV), and amebic infection. *Artocarpus champeden* is one of plants which had been used by indigenous culture in Papua area for malarial treatment. It becomes a potential alternative antimalarial drug after years of research. Several active compounds had been isolated and identified the chemical structures. Furthermore, the extract had been formulated and passes through preclinical and clinical study. Meanwhile, anti-HCV and anti-amebic candidates were obtained from screening activity of plants species explored from conservation forest. The plants collected based on ethnomedicine and chemotaxonomy approach. These approachs were proven to be effective in selecting promising plants.
The discovery of alternative drugs for anti-infectious disease can be obtained from natural products such as from plants, microbes and marine products. It requires identification of phytochemical compounds and combinatorial synthesis to enhance drug development process. Consequently, the success of drug discovery was depending on multidisiplinary collaborations.

Keywords: *Indonesian biodiversity, drug discovery, anti-infectious disease*

-IL1-

The Possibility of Vivax Malaria Elimination: Clinical Overview

Srivicha Krudsood[1*]

[1]*Faculty of Tropical Medicine, Mahidol University, Bangkok 10400 Thailand*

*Presenting author
Email: srivicha.kru@mahidol.edu, Phone: +662 354 9159

ABSTRACT

Plasmodium vivax imposes special challenges in control and elimination. First, parasites may persist in human hosts for a long period of time as hypnozoites, the dormant liver stages that can cause multiple relapses after primary infection. As a consequence, antimalarial drugs that are active against blood and liver stages are required. Currently, tafenoquine (TQ) and primaquine (PQ) are the only FDA-approved medicine for preventing relapsing *P. vivax* infection. Unfortunately, both TQ and PQ can cause severe hemolysis in patients with glucose-6-phosphate dehydrogenase (G6PD) deficiency, a common genetic defect and enzyme deficiency in humans. Therefore, rapid, sensitive and accurate diagnosis of G6PD deficiency before TQ and PQ treatment is essential to ensure safe use of 8-aminoquinolines, especially for routine use in malaria-endemic areas.

Second, low-density blood-stage *P. vivax* infections are common, making laboratory diagnosis particularly difficult. Third, *P. vivax* populations are greater genetically diverse than *P. falciparum* and natural infections often comprise several co-existing genetically distinct parasite clones, causing an increase in genetic complexity which might lead to a rapid development of new parasite strains. Furthermore, drug resistance also plays a significant role in radical cure of vivax malaria. Hence, a better understanding of *P. vivax* biology is critical, especially information regarding the liver stage. The hypnozoite presents a particular difficulty for control and elimination of *P. vivax* malaria because the currently available diagnostic methods are not able to detect the liver stages.

To tackle vivax malaria, it is critical to understand the spread and emergence of resistant vivax malaria parasites and hemolytic risk from G6PD deficiency and to determine the risk factors associated with vivax recurrence. This is to ensure effective treatment policy and improve the treatment strategies for vivax malaria control and elimination.

Keywords: *Malaria, P. vivax, elimination, G6PD deficiency*

-IL2-

G6PD Deficiency: Prevalence, Molecular Diagnosis and Characterization

Usa Boonyuen[1*], Kamonwan Chamchoy[1], Aun Praoparotai[1], Ponchanan Pakparnich[1] and Duantida Songdej[2]

[1]*Department of Molecular Tropical Medicine and Genetics, Faculty of Tropical Medicine, Mahidol University, Bangkok, Thailand 10400;*
[2]*Department of Pediatrics, Faculty of Medicine Ramathibodi Hospital, Mahidol University, Bangkok, Thailand 10400*

*Presenting author
Email: usa.boo@mahidol.ac.th, Phone: +66826488989

ABSTRACT

Background: One of the most pressing challenges in malaria elimination is the identification and diagnosis of patients who will be able to tolerate and metabolize drugs that can be used for mass administration. Primaquine and tafenoquine are the only approved drugs that can kill dormant liver stage (hypnozoites) of *P. vivax* and *P. ovale*, preventing the relapse. Importantly, primaquine remains the only readily-available drug that actively clears mature gametocytes of *P. falciparum*, a transmission-blocking potential of antimalarial. Since both drugs can cause hemolysis in G6PD-deficient individuals diagnosis of G6PD deficiency is crucial to ensure safe and effective treatment and recommended before primaquine and tafenoquine prescription. In addition, at present, there is no reliable information regarding G6PD genotype, enzyme activity and severity of drug-induced hemolysis, therefore, it is an absolute necessity to optimize the use of drugs, maintaining the effectiveness, while reducing the risk for G6PD deficiencies.

Objective: This study aimed to gain a better understanding of the relationship between G6PD activity and risk of hemolysis in those with G6PD deficiency.

Methods: Molecular diagnoses were performed to screen for G6PD deficiency in central Thailand as well as Thai-Myanmar border and the prevalence and genotype of G6PD deficiency were determined. Furthermore, relationship between G6PD activity and risk of hemolysis was investigated using *in vitro* model.

Results: G6PD status in Thai population was assessed via a combination of quantitative enzyme activity assays. The data indicate that G6PD deficiency is common among people living in malaria endemic area along Thai-Myanmar border. The underlying molecular mechanisms of clinical manifestations of G6PD deficiency are mainly determined by the trade-off between protein stability and catalytic activity.

Conclusion: It is essential to characterize and quantify antimalarial drug hemolytic potential so that drugs can be used safely in a public health setting.

Keywords: *G6PD deficiency, prevalence, hemolysis, primaquine, diagnosis.*

-IL3-

Chasing *P. Vivax* Hypnozoite

Rapatbhorn Patrapuvich[1*]

[1]*Drug Research Unit for Malaria, Faculty of Tropical Medicine, Mahidol University, Bangkok Thailand*

*Presenting author
Email: rapatbhhorn.pat@mahidol.edu, Phone: +66 2 354 9100 ext 2150

ABSTRACT

The most challenge for eliminating *P. vivax* malaria is developing interventions to eradicate the dormant hypnozoites. Although hypnozoites were first discovered in 1982, very few advancements have been made to understand their composition and biology. This is mainly due to the lack of a continuous *in vitro* culture system; unlike *P. falciparum*, research on *P. vivax* parasites requires 1) access to infected patients in endemic countries and 2) a regular supply of reticulocytes. Very limited supply of *P. vivax* sporozoites is also a major obstacle in developing hypnozoite model. Several liver stage models have been developed, including a simple *in vitro* HC-04 cell line and primary human hepatocyte models. However, long-term culture of primary human hepatocytes is still limited and required improvement to sustain hepatic functions *in vitro*. Here, we describe the establishment of a novel *in vitro* system to quickly obtain hypnozoites. This could be achieved by using a novel immortalized hepatocyte-like cell line (imHC) that efficiently supports *P. vivax* liver stage parasites and a chemical compound that efficiently kills only large growing liver stage parasites, not hypnozoites. imHC could be maintained long-term in culture for months without overgrowth and detachment, thereby facilitating the development of an *in vitro* hypnozoite system. We demonstrate *in vitro* culture of *P. vivax* hypnozoites in imHCs, including their reactivation from dormancy. Our platform will enable the characterization of hypnozoite biology and potential regulators of dormancy of malaria parasites, and also help design new hypnozoite-targeting drugs.

Keywords: *Malaria, P. vivax, liver-stage model, hypnozoites.*

SCHEDULE OF ORAL PRESENTERS

Day 1 (Tuesday, August27th2019)

Room Kahuripan 301

Moderator: Prof. Indah S. Tantular, dr., M.Kes., Ph.D., Sp.Park.

	13.00-14.15		
Time	**Oral Presentation**	**Author**	**Title**
13.00-13.12	OP001	Dinar Adriaty	Correlation of *Mycobacterium leprae* DNA in Nasal Swab and Antibody Response of Phenolic Glycolipid-1 among Children in the Coastal Region of East Java Indonesia
13.13-13.25	OP002	Khairan Irmansyah	Implementation of Humanitarian Aid and Disaster Relief for the 1st Kostrad Health Battalion in Natural Disasters in Indonesia in 2018
13.26-13.38	OP003	Dian Ayu Eka Pitaloka	Regulation of Mitogen-Activated Protein Kinase (MAPK) Signaling Pathway and pro-Inflammatory Cytokines by Ursolic Acid in Murine Macrophages Infected with *Mycobacterium avium*
13.39-13.51	OP004	Timbul Partogi H. Simorangkir	Study of Possibility Physical Interactions Antimalarial Combination Drugs
13.52-14.04	OP005	Puspa Wardhani	Performance Comparison of Two Malaria Rapid Diagnostic Tests with Malaria Microscopy Detection and Real-Time Polymerase Chain Reaction as the Gold Standard

Room Kahuripan 305

Moderator: Dr. Ni Njoman Juliasih, dr., M.Kes.

	13.00-14.15		
Time	**Oral Presentation**	**Author**	**Title**
13.00-13.12	OP006	I Gede Parama Gandi Semita	Diagnostic Test Accuracy of Xpert MTB/RIF for Tuberculous Pericarditis: A Systematic Review and Meta-Analysis
13.13-13.25	OP007	Rebekah Setiabudi	Gene Expression Trytophan Aspartate Coat Protein in Determining Latent Tuberculosis Infection using Immunocytochemistry (ICC) and Real Time PCR (RT-PCR)
13.26-13.38	OP008	Eka Airlangga	The Characteristic of Tuberculosis Scoring Items of Children with Pulmonary Tuberculosis in Medan, Sumatra Utara
13.39-13.51	OP009	Tiara Mayang Pratiwi Lio	Analysis of AST and ALT Levels in Tuberculosis Patients in RSUD Kota Kendari
13.52-14.04	OP010	Wahyu Herlambang	The Diversity Characteristics in Species of *Mycobacterium Tuberculosis* Complex (MTBC) That Cause Disease in Human

Room Kahuripan 301

Moderator: Dr. Waras Budiman

	14.15-15.30		
Time	**Oral Presentation**	**Author**	**Title**
14.15-14.27	OP011	Randi Sagasiousman	Immunization to Indonesian Armed Forces: Latest Prespective on Prevent Infectious Disease and Biological Threats
14.28-14.41	OP012	Aamir Shehzad	Footprints of Biological Threats based on Brucellosis to the Lives of Desert Thal, Pakistan

14.42-14.54	OP013	Yogi Ertanto	Enhancing Military Biodefense Research Capabilities against Biological Threats in Indonesia
14.55-15.07	OP014	Yuli Subiakto	Aviation Medicine Capacity on Facing Biological Threat in In Indonesia Airport
15.08-15.20	OP015	Soroy Lardo	Transformation of Infectious Diseases and The Indonesian National Military Health Research Collaboration In Supporting National Health Security

Room Kahuripan 305

Moderator: Dr. Prihartini Widiyanti, drg., M.Kes.

	14.15-15.30		
Time	**Oral Presentation**	**Author**	**Title**
14.15-14.27	OP016	Muhammad Afif Sholehuddin	Microbiological Profile of Pathogenic Bacteria and Fungus on Children with Hirschprungs Disease and Their Complication in Dr. Soetomo General Hospital Surabaya
14.28-14.41	OP017	Dionisia Vidya Paramita	Profile of Conginental Rubella Syndrome in Soetomo General Hospital Surabaya
14.42-14.54	OP018	Titut Harnanik	Hyperbaric Oxygen in Animal Model of Rheumatoid Arthritis: Analysis of HIF-1α, ACPA and IL-17a
14.55-15.07	OP019	Sulastrianah	Identification, Distribution, and Drug Resistance of *Staphylococcus aureus* from Surgical Site Infection
15.08-15.20	OP020	Tasnim	The Relationship Between Cadre's Capacity and Assessing to the Fast Food Seller's Performance in Food Hygiene and Sanitation In Mokoau Primary Health Care, Kendari City

Room Kahuripan 301

Moderator: Dwi Wahyu Indriati, S.Si., Ph.D.

	15.30-17.00		
Time	**Oral Presentation**	**Author**	**Title**
15.30-15.42	OP021	Ni Luh Ayu Megasari	Genotypic Characterization of HIV-1 Derived from Art-Experienced Individuals in Buleleng Regency, Bali, Indonesia
15.43-15.55	OP022	Gigih Imanta Jayantri	Management for Dengue Preventing and Control in 1st Fleet of Indonesia Todays
15.56-16.08	OP023	Erwin Astha Triyono	The Mechanism of the Effects of Monascus jmbA Rice on Increased Platelet Count in Wistar Rats Infected with Dengue Virus Serotype 3
16.09-16.21	OP024	Eka Febriyanti	Adherence to Anti-Retroviral Therapy and Its Associated Factors among Patients with HIV/AIDS in Central Java Indonesia
16.22-16.34	OP025	Rina Yunita	Serotype Distribution and Clinical Manifestations of Dengue Virus Infection in Medan
16.35-16.57	OP026	Devi Oktafiani	Human Herpes Virus 8 Antibodies in HIV-Positive Patients in Surabaya, Indonesia

Room Kahuripan 305

Moderator: Dr. Juniastuti, dr., M.Kes.

	15.30-17.00		
Time	**Oral Presentation**	**Author**	**Title**
15.30-15.42	OP027	Ni Nyoman Juliasih	Analysis of Tuberculosis Program Management in Primary Health Care: A Qualitative Study

15.43-15.55	OP028	Erike A Suwarsono	Added Value of Bleach for Tuberculosis Microscopy Diagnostic in Limited Resources Setting
15.56-16.08	OP029	Elsa Rosalina	Conginental Rubella Syndrome Profile in Audiology Outpatient Clinic of Dr. Soetomo Hospital Surabaya, Indonesia
16.09-16.21	OP030	Rahmi Dianty	First Case of Ciprofloxacin Resistant *Campylobacter Jejuni* from Blood Culture of Pediatric Patient with Biliary Atresia at Dr. Soetomo Hospital Surabaya, Indonesia
16.22-16.34	OP031	Hotimah Masdan Salim	Characterization of Hepatitis B Virus_surface gene Mutations
16.35-16.57	OP032	Hamidah Retno Wardani	Prevalence of Latent Tuberculosis Infection in Hemodialysis Patients : A Systematic Review

Day 2 (Wednesday, August28th2019)

Room Kahuripan 301

Moderator: Capt. dr. Sapta

	15.25-16.45		
Time	**Oral Presentation**	**Author**	**Title**
15.25-15.37	OP033	Abdul Hadi Furqoni	'TOUCH DNA' Analysis as an Alternative Substance of Forensic Examination through CODIS STR
15.38-15.50	OP034	Erina Sudaryati	Comparison of The Quality of Life of TB and MDR-TB Patients
15.51-16.03	OP035	RM Abdul Adjid	Sero-epidemiology of Leptospira Infection in a Cattle Population
16.04-16.16	OP036	Risqa Novita	Brucellosis is a Neglected Zoonosis Disease in Cilawu, West Java
16.17-16.29	OP037	Suryani Dyah Astuti	Effectiveness of Blue Diode Laser for Biofilm Reduction of *Staphylococcus aureus* based on Age Variations in Bacterial In Vitro
16.29 – 16.41	OP038	Nastiti Intan Permata Sari	Strains Distribution of *Mycobacterium tuberculosis* complex in Java

Room Kahuripan 305

Moderator: Dr. Aty Widyawaruyanti, M.Si., Apt.

	15.25-16.45		
Time	**Oral Presentation**	**Author**	**Title**
15.25-15.37	OP039	Ariza Sari	Cocoa Extract Consumption Inhibited *Shigella Dysenteriae* Growth in Mouse Intestine
15.38-15.50	OP040	Farida Dwi Handayani	High Feasibility Laboratory Detection of Pathogenic Leptospira From Urine Samples In Indonesia
15.51-16.03	OP041	Myrna Adianti	Indonesian Plants Exhibited Antiamoeba against *Entamoeba histolytica* by Enzymatic Assays
16.04-16.16	OP042	Ricky Indra Alfaray	Tembelek Plant (*Lantana camara*) as Potential Alternative Bioactive Natural Product against *Streptococcus pyogenes* in Indonesia
16.17-16.29	OP043	Sri Anggarini Rasyid	The Sensitivity Comparison of Extract of Tembelekan Leaf (*Lantana camara* L.) and Kopasanda Leaf (*Chromolaena odorata* L.) to *Staphylococcus aureus* Bacteria
16.29 – 16.41	OP044	Hermin Ratnani	Alpha-Tocopherol Improves Sperm Quality by Regulate Intracellular Ca^{2+}Intensity (Influx/Efflux) of Bovine Sperm

OP001

Correlation of *Mycobacterium Leprae* DNA in Nasal Swab and Antibody Response of *Phenolic Glycolipid-1* among Children in The Coastal Region of East Java Indonesia

Dinar Adriaty[1]*, Ratna Wahyuni[1], Iswahyudi[1], Cita Rosita SP[1,2], Indropo Agusni[1,2], Shinzo Izumi[1]

[1]*Leprosy Study Group-Institute of Tropical Disease, Universitas Airlangga, Campus C, Mulyorejo Surabaya*
[2]*Dermatology and Venereology, Faculty of Medicine, Universitas Airlangga, Surabaya East Java Indonesia*

*Presenting author
Email: ddriaty@yahoo.co.id, Phone: +628165414604

ABSTRACT

Background: East Java has become one of the provinces that have higher prevalence especially in the coastal region. Environment has also had potential reservoir for leprosy transmission especially non-human factor. Epidemiological studies of leprosy in children can give an illustration of the important aspects of the environment. Presence of *M.leprae* DNA in nasal swabs and seropositivity level among them can describe *Mycobacterium leprae* exposure in that area.
Objective: Analyzing PCR from nasal swab and seropositivity level among elementary school children between northern coast and southern coast of east java province.
Methods: Five hundred and thirty children in Pacitan and Lamongan were involved. Both areas are representation of northern coastal and southern coastal region in East Jawa Province. After clinical examination, nasal swab and blood samples were obtained. ELISA test was performed to measure the titer of IgM anti *Phenolic Glicolipid-1* (PGL-1) antibody then continued by PCR to detect *M.leprae* DNA.
Results: From 301 students in Pacitan, 25 students (8.3%) are sero-positives and 9 students (2.9%) are PCR positives. from 229 students in Lamongan, 110 (48,3%) students are sero-positives and 49 students (21.4%) are PCR positives. Both are analyzed by *Chi-Square,* and from the PCR and ELISA X^2 *val* > X^2 *tab*, it concluded that there are statistically significant difference between the two regions.
Conclusion: From study above shows that in the northern coast of East Java, incidence of subclinical leprosy is still high, it means that in this area still has a high risk of new cases of leprosy in the future.

Keywords : *Mycobacterium leprae* , DNA, *phenolic glycolipid-1,* children, Indonesia

OP002

Implementation of Humanitarian Aid and Disaster Relief for The 1st Kostrad Medical Battalion in Natural Disasters in Indonesia in 2018

Khairan Irmansyah[1]*

[1] *1st Medical Batalyon Commander Kostrad*

*Presenting author
Email: khairanirmansyah27@gmail.com

ABSTRACT

Disaster relief requires efforts on many fronts; providing rescue, health and medical assistance, water, food, shelter and long term recovery effort. This article considers 1st Medical Batalyon Kostrad involvement in Humanitarian Assistance and Disaster Relief (HADR) in Indonesia in 2018.

Keyword: *Humanitarian Assistance, Disaster Relief, Military Organization*

OP003

Regulation of Mitogen-Activated Protein Kinase (MAPK) Signaling Pathway and Pro-Inflammatory Cytokines by Ursolic Acid in Murine Macrophages Infected With *Mycobacterium Avium*

Dian Ayu Eka Pitaloka[1*], Aluicia Anita Artarini[2], Sophi Damayanti[3], and Elin Yulinah Sukandar[1]

[1]*Department Pharmacology-Clinical Pharmacy, School of Pharmacy, Institut Teknologi Bandung, Jl. Ganesa no. 10, Bandung 40132;*
[2] *Department of Pharmacochemistry, School of Pharmacy, Institut Teknologi Bandung, Jl. Ganesa no. 10, Bandung 40132;*
[3] *Department of Pharmaceutical Biotechnology, School of Pharmacy, Institut Teknologi Bandung, Jl. Ganesa no. 10, Bandung 40132*

*Presenting author
Email: dianayuekapitaloka@gmail.com, Phone: +6281320578785

ABSTRACT

Background: *Mycobacterium avium* are considered a major human pathogen causing tuberculosis-like disease in human and associated with host immune tolerance. Regulation of cytokines and signalling pathway which are responsible for this process are critically important to enhance the ability of antibiotic therapy to eliminate *Mycobacterium avium.*

Objective: The purpose of this study was to examine the ability of UA as antimycobacterial agent and its regulation in macrophages infected with *Mycobacterium avium.*

Methods: Regulation of UA on the MAPK signaling pathway in *Mycobacterium avium*-infected macrophages was determined by analyzing the UA's ability to phosphorylate three MAPK pathways (ERK, SAPK/JNK, and MAPK p38). The ability of UA to activate the MAPK in *Mycobacterium avium*-infected macrophages was also carried out by analyzing the concentration of TNF-α, IL-1β, IL-6, and nitrite. Colony Forming Unit (CFU) was determined to provide an overview of the antimycobacterial effect of UA in *Mycobacterium avium*-infected macrophages.

Results: The treatment of UA in *Mycobacterium avium*-infected macrophages was able to inhibit the production of TNF-α and IL-6, but increased the production of IL-1β and nitrite. The CFU analysis showed no *Mycobacterium avium* colonies were found both in cell lysates and supernatant. UA also has been found to inhibit the phosphorylation of the p38 and ERK1/2 but had an ability to phosphorylate the SAPK/JNK signaling pathway.

Conclusion: In conclusion, UA had anti-mycobacterial activity in *Mycobacterium avium*-infected macrophages. This ability was correlated to UA's ability to regulate MAPK signaling pathway, cytokine production, and nitrite. This dualism ability made elimination of the bacillus more effective.

Keywords: *Ursolic acid, Mycobacterium avium, MAPK, pro-inflammatory cytokines, Macrophages*

OP004

Study of Possibility Physical Interactions Antimalarial Combination Drugs

Timbul Partogi H.Simorangkir[1]

[1]*Indonesian Army's Pharmaceutical Institute*

*Presenting author
Email: tphsimorangkirsimon@gmail.com, Phone: +628122347496

ABSTRACT

Identification of solid state to investigate the possibility of physical interaction between Antimalarial Artemisinin Combination Treatment base (ACT) Artesunate (AS) and Amodiaquine (AQ) by hot contact method Kofler, cold contac method (crystallization reaction) and biner phase diagram confirmation had been carried out. The results of hot contact method Kofler shown formation a new crystalline habit as long and thin needle shaped on contact zone (mixing zone) between AS and AQ. It had a different melting point in compared to its single component. Crystallization reaction (cold contact methods) between two of supersaturated solution of component AS and AQ in methanol solvent also indicated the growth of crystal habit as similar as hot contact method Kofler. Confirmation by biner phase diagram had shown the specific diagram for cocrystalline phase. Solid state interaction between AS and AQ was analysed by powder X-ray diffraction, FTIR spectrophotometric, microscopic SEM and thermal DTA, TG-DSC. Microscopic analysis by SEM shown significanMPy the change of habit and morphology of crystal as long and thin needle shaped. The difference of powder X-ray diffraction (PXRD) interferences peaks were observed in addition to PXRD interference peaks of each component and its physical mixtures that proved formation of cocrystalline phase. DSC Thermogram indicated a new endothermic peak corresponding to melting point of a new cocrystalline phase at temperature 160.4 °C.

Keywords: *Artesunate, Amodiaquine HCl, ACT, Physical Interaction, Molecular Compound, Cocrystall, Kofler contact methods, Cold Contact Methods, Biner Phase Diagram, Thermal analysis , Crystallography, Spectrography, Microscopics*

OP005

Performance Comparison of Two Malaria Rapid Diagnostic Tests with Malaria Microscopy Detection and Real-Time Polymerase Chain Reaction as the Gold Standard

Puspa Wardhani[1*], Trieva Verawaty Butarbutar[2], Christophorus Oetama Adiatmaja [2], Amarensi Milka Betaubun[3], Aryati[1]

[1]*Clinical Pathology Department, Faculty of Medicine, Universitas Airlangga/Dr. Soetomo General Academic Hospital, Jl. Prof. Dr. Moestopo No. 47 Surabaya, Indonesia.*
[2]*Clinical Pathology Specialist Study Programme, Clinical Pathology Department, Faculty of Medicine, Universitas Airlangga/Dr. Soetomo General Academic Hospital, Jl. Prof. Dr. Moestopo No. 47 Surabaya, Indonesia.*
[3]*Clinical Pathology Subspecialist Study Programme, Clinical Pathology Department, Faculty of Medicine, Universitas Airlangga/Dr. Soetomo General Academic Hospital, Jl. Prof. Dr. Moestopo No. 6-8 Surabaya, Indonesia.*

*Presenting Author
Email: puspa_pk@yahoo.co.id, Phone: +628123176937

ABSTRACT

Background: Malaria diagnostic test mostly relied on Rapid Diagnostic Test (RDT) and microscopy detection. Malaria microscopy detection result depends on the skill and experience of the examiner. RDT was considered as the solution for malaria diagnosis. Many RDTs have been distributed in Indonesia, which their performance are needed to be evaluated. Polymerase Chain Reaction (PCR) is also a sensitive detection method that can be considered as a diagnostic tool.

Objective: This study aimed to compare the performance of RightSign RDT and ScreenPlus RDT for detection *Plasmodium* in human blood. We calculated diagnostic performance using different gold standard, Malaria microscopy detection, and Real-Time Polymerase Chain Reaction (RT-PCR *abTES^{TM}Malaria qPCR II*).

Methods: Blood Specimens were evaluated by RightSign RDT, ScreenPlus RDT, Microscopy detection, and RT-PCR as the protocol described. We analyzed specificity, sensitivity, positive predictive value (PPV), negative predictive value (NPV). McNemar and Kruskal Wallis analyzed performance different between RDTs.

Results: A total of 105 subjects were recruited. Based on microscopy test, RightSign RDT had sensitivity, Specificity, PPV, NPV, 100%, 98 %, 98.2 %, 100 %, respectively. ScreenPlus showed 100 % sensitivity, 98 % specificity, 98.2 % PPV, 100 % NPV. The sensitivity of both RDTs became lower (75%) and specificity higher (100 %) when using PCR as a gold standard. Both tests showed a 98 % agreement. RT-PCR detected higher mix infection when compared to microscopy and RDTs.

Conclusion: RightSign and ScreenPlus RDT have excellent performance when using microscopy as a gold standard. RT-PCR method can be considered as a confirmation tool for malaria diagnosis.

Keywords: *Malaria, Rapid Diagnostic Test, microscopy, RT-PCR, Plasmodium*

OP006

Diagnostic Test Accuracy of Xpert MTB/RIF for Tuberculous Pericarditis: A Systematic Review fnd Meta-Analysis

Andrianto[1], Ni Made Mertaniasih[2,3], Benjamin J. Espinosa[4], I Gede P. G. Semita[1,5*], Makhyan J. Al-Farabi[1,6], Yusuf Azmi[1], Michael Jonatan[1], Kadek D. Chandita[1]

[1] *Department of Cardiology and Vascular Medicine*
Faculty of Medicine, Universitas Airlangga, Surabaya, Indonesia
[2] *Institute of Tropical Disease, Universitas Airlangga, Surabaya, Indonesia*
[3] *Department of Microbiology Medicine*
Faculty of Medicine, Universitas Airlangga, Surabaya, Indonesia
[4] *Biological Defense Research Directorate at Naval Medical Research Center – Frederick*
Bureau of Medicine and Surgery, United States Navy
[5] *Department of Cardiology and Vascular Medicine*
Indonesian Navy Hospital of Dr. Ramelan, Surabaya, Indonesia
[6] *Postgraduate Student, University College London, Gower St, Bloomsbury, London, United Kingdom*

*Presenting author
Email: dr.ramagandi@tnial.mil.id, Phone: +628113081363

ABSTRACT

Introduction: Xpert MTB/RIF is one of the latest diagnostic instrument that is useful for diagnosing TB in a short time. Several studies have investigated the diagnostic tests accuracy of Xpert MTB/RIF for tuberculous (TB) pericarditis, but the evidence base is less clearly defined.

Objective: This study aimed to assess the diagnostic test accuracy of Xpert MTB/RIF for TB pericarditis using meta-analysis.

Methods: Electronic database of PubMed and EMBASE were searched to identify studies investigating the diagnostic test accuracy for Xpert MTB/RIF in pericardial effusion for TB pericarditis. We conducted a quality assessment using QUADAS-2 to assess the quality of the eligible studies. The overall diagnostic sensitivity and specificity of included studies were pooled by a bivariate model.

Results: A total of 8 studies encompassing 462 subjects were included. The pooled sensitivity, specificity, positive and negative likelihood ratios (NLRs) were 0.691 [95% confidence interval (CI): 0.577–0.786], 0.996 (95% CI: 0.846–1.00), 156.78 (95% CI: 3.71–6531.41) and 0.310 (95% CI: 0.219–0.439), respectively.

Conclusion: Xpert MTB/RIF had very high specificity but more modest sensitivity for the diagnosis of TB pericarditis. This finding implies that although positive Xpert MTB/RIF test results may be useful in rapidly identifying TB pericarditis cases, negative test results provide less certainty for ruling out active TB pericarditis when compared to culture.

Keywords: *Xpert MTB/RIF, tuberculous pericarditis, diagnostic test accuracy, sensitivity, specificity*

OP007

Gene Expression Tryptophan Aspartate Coat Protein in Determining Latent Tuberculosis Infection using Immunocytochemistry (ICC) and Real Time PCR (RT-PCR)

Rebekah J. Setiabudi [1,a], Ni Made Mertaniasih[2], Muhammad Amin[3], Wayan Tunas Artama[4]

[1,2] *Department of Microbiology, Faculty of Medicine, Universitas Airlangga.*
[3] *Department of Pulmonology, Faculty of Medicine, Universitas Airlangga.*
[4] *Faculty of Veterinary, Gajah Mada University.*

*Presenting author
Email: rebekahsetiabudi@gmail.com, phone: +628123031557

ABSTRACT

Background: Tuberculosis (TB) remains a major cause of morbidity and mortality worldwide. Problem of Latent Tuberculosis Infection (LTBI), which is increasing in number especially in countries with high TB incidence rate such as Indonesia, have not been diagnosed properly yet. Although not every LTBI will become active TB, but if untreated and not handled appropriately it can also be a source of transmission and increase the case of Multidrug Resistant Tuberculosis (MDR-TB). *Mycobacterium tuberculosis* as a cause of tuberculosis disease is an intracellular pathogens that survives within the phagosome of host macrophages. Several host factors which are involved in this process, among others are tryptophan aspartate containing coat protein (TACO). TACO is a protein recruited and retained by viable *Mycobacterium tuberculosis* on the surface of the phagosome membrane to maintain its survival in phagosome, because the presence of TACO plays an important role in inhibiting the fusion of phagosomes and lysosomes.
Objective: To study the difference of gene expression TACO protein in Latent Tuberculosis Infection (LTBI) and healthy people.
Method: A preliminary study mRNA examination of TACO protein using ICC and RT-PCT method by a PCR Light Cycler 2.0 machine (Roche) in LTBI and healthy groups.
Results: Eighteen samples of peripheral blood monocyte cells (PBMCs) divided into 2 groups and found that there was a significantly difference among the 2 groups of samples,
Conclusion: Measuring TACO expression using RT-PCR method may be considered for determining LTBI as additional of previous tests.

Keyword: *TACO, ICC, RT-PCR, Mycobacterium tuberculosis, LTBI.*

OP008

The Characteristic of Tuberculosis Scoring Items of Children with Pulmonary Tuberculosis in Medan, Sumatra Utara

Dita AD Nasution, Eka Airlangga*

[1]*Department of Child Health, Faculty of Medicine,*
Universitas Muhammadiyah Sumatra Utara, Medan 20235

*Presenting author
Email: ekaairlangga@umsu.ac.id, Phone: +628116000409

ABSTRACT

Background: The diagnosis of children tuberculosis is frequently difficult, because children particularly under 10 years old usually cannot cough up enough sputum for laboratory confirmation. Tuberculosis scoring system often make use of clinical symptoms, signs, contact history and basic investigation such as chest x-ray.

Objective: The study objective was to identify characteristic of tuberculosis scoring items in children with pulmonary TB.

Methods: This was a descriptive study by collecting the data of medical records of children under 18 years old with pulmonary TB in Haji Hospital of Sumatra Utara. All medical records of children with pulmonary TB during 2017 till 2018 were included. Medical records show data with HIV, cancer, organ transplantation, chronic kidney disease and diabetes mellitus were excluded from the study. The Haji Hospital was purposely elected, as this is one of the referring hospitals for TB management in Sumatra Utara.

Results: There were 128 children with pulmonary TB. Boys were the most affected (66 children/51.6 %) and the age were 1 to 5 years old (49 children/38.3 %). Mainly children (119 children/93 %) were not immunized of BCG and 106 children (82.8%) did not have contact with adult tuberculosis. All children had fever, 122 (95.3%) children had cough and 105 (82%) children had malnutrition.

Keywords: *children with pulmonary TB, characteristic, tuberculosis scoring.*

OP009

Analysis of AST and ALT Levels in Tuberculosis Patients in RSUD Kota Kendari

Sri Anggarini Rasyid[1], Armayani[2], Yuniati[1], Tiara Mayang Pratiwi Lio[1*]

[1]*D-IV Teknologi Laboratorium Medis, STIKES Mandala Waluya Kendari, Kendari 93232;*
[2]*S1 Keperawatan, STIKES Mandala Waluya Kendari, Kendari 93232 ;*

*Presenting author
Email: tiaramayangpratiwilio@yahoo.com, Phone: +6282292534410

ABSTRACT

Background: The treatment of TB patients, it is generally directly given Anti Tuberculosis Drugs (Obat Anti Tuberculosis/OAT) without examining Serum Glutamic Pyruvic Transaminase (SGPT) and Serum Glutamic Oxaloacetic Transaminase (SGOT) to see whether or not there is liver damage before treatment. While OAT is a drug that has several side effects such as extensive and permanent liver injury.
Objective: Because of the side effects by OAT, it is important to know how the condition of the liver function of TB patients who consume OAT in Regional Public Hospital of Kendari city (Rumah Sakit Umum Daerah/RSUD) Kota Kendari by looking at SGOT and SGPT levels in order to provide maximum treatment to TB patients.
Methods: The Metode of this research was descriptive. The sample is all patients diagnosed with TB in RSUD Kota Kendari who started the beginning of treatment with OAT in February until March without any sign of liver injury before. Examination of SGOT and SGPT levels was performed on all samples in the Laboratory of RSUD Kota Kendari.
Results: The results of this study showed that 3 of 15 (20%) patients with TB had elevated levels of SGPT and SGOT. Whereas 12 (80%) people have normal levels of SGPT and SGOT.
Conclusion: The Inference of this study that the TB patient is at risk of experiencing liver damage during the treatment process with OAT.

Keywords: *SGOT, SGPT, TB, Kendari.*

OP010

The Diversity Characteristics in Species of *Mycobacterium tuberculosis* Complex (MTBC) That Cause Disease in Human

Wahyu Herlambang[1*] and Mohammad Gerry Oxa[2]

[1]*Tropical Medicine, Faculty of Medicine, Universitas Airlangga, Surabaya 60115;* [2]*Faculty of Pharmacy, Universitas Airlangga, Surabaya 60132*

*Presenting author
Email: wahyu.herlambang-2018@fk.unair.ac.id, Phone: +6281237411413

ABSTRACT

Background: More than one-third of the world's population has been infected by *Mycobacterium tuberculosis* complex (MTBC). This group of bacteria can cause tuberculosis (TB). The verification of diagnosis of TB can be seen from various aspects such as patient's clinical presentation and causative agent. In developing countries, the general diagnosis still based on the clinical presentation of the patient, some have done rapid molecular test using Gene Xpert to detect MTBC and resistance to rifampicin. This test only detects MTBC group and can't distinguish each species.

Objective: MTBC itself consists of *M. tuberculosis, M. africanum, M. canettii, M. bovis, M. microtii, M. orygis, M. caprae, M. pinnipedii, M. suricatte*, and *M. mungi*. Each MTBC species has different characteristics such as gene profiles, clinical manifestations and virulence in the host. These differences become an important aspect to be known as a basis for establishing a specific diagnosis at the species level. The differences are related to gene distinctions due to MTBC ancestral gene mutations that occur over time to adapt to the infected host.

Methods: We were using articles from Google Scholar prioritizing publication from the past 5 years. We reviewed the titles and abstracts. Full-text articles containing relevant information for the topic were reviewed and included in the reference list.

Conclusion: This article is expected to be a reference for establishing TB diagnosis down to the species level and can be a reference for further research on more specific therapies based on the identified MTBC species.

Keywords: *Diagnostic, molecular, MTBC, tuberculosis.*

OP011

Immunization to Indonesian Armed Forces: Latest Perspective on Prevent Infectious Disease and Biological Threats

Randi Sagasiousman[1*], Shafia Khairani[2]

[1]*Institute of Biology Vaccine – TNI AD, Gudang Selatan No. 26 Bandung, 40113*
[2]*Veterinary Medicine Program, Faculty of Medicine, Padjadjaran University – Bandung 45363*

*Presenting author
Email: r.sagasiousman@gmail.com, Phone: +6282211039462

ABSTRACT

Background: Infectious diseases represent a global concern and the most effective strategy to reduce them is vaccination. Preventative vaccination was one of the ten greatest public health achievements of the last century. Vaccines are recognized worldwide as one of the most important tools for combating infectious diseases and biothreats.

Objective: Indonesians serving with the Indonesian Armed Forces need protection from the dangerous infections that they can contract during training, based on occupation, during overseas deployment, or because of underlying health status. The military health-care system has immunized troops to protect them personally and to help them accomplish their missions. Military researchers have invented, developed, and improved vaccines and immunization delivery methods against diseases especially hepatitis.

Methods: This article consolidates content from several previous historical reviews, adds additional sources, and cites primary literature regarding military contributions and accomplishments.

Results: Delivery issues include documentation, simultaneous immunization, serological-screening, safety surveillance and cold-chain management. Immunization policies for each major Indonesian conflict are described. Military immunization programs need to be individualized on the basis of personal contraindications and prior immunity. The proper conduct of military immunization programs respects the need for detailed education of military personnel, maximizes quality in immunization delivery, and supports quality clinical care to prevent and treat adverse events after immunization.

Conclusion: Military immunization programs maintain the health of soldiers, marines, sailors, airmen, and coast guardsmen, the resources most critical to military success.

Keywords: *Institute of Biology Vaccine, Vaccine, Biological threat, zoonotic diseases*

OP012

Footprints of Biological Threats Based on Brucellosis to the Lives of Desert Thal, Pakistan

Aamir Shehzad[*1], Fedik Abdul Rantum[1], Awais Masud[2] and Shahbaz Ahmed[3]

[1], Faculty of Veterinary Medicine, Universitas Airlangga, Surabaya 6011, Indonesia; [2] Disease Diagnostic Laboratory Livestock & Dairy Development Department, Mianwali 42200Punjab Pakistan: [3] LES Rakh Ghulama Livestock & Dairy Development Department Bhakkar 30000 Punjab ,Pakistan.

*Presenting author Aamir Shehzad
Email: wildlifepk1947@gmail.com, Phone: +6285231209210

ABSTRACT

Background: In the latest warfare techniques, the uses of biological agents become common as a weapon of incapacitating lives. The emerging challenge is to find preventive techniques for minimizing the harmful effects of biological threats to lives. Brucella is known as one of the dangerous biological agents, having the zoonotic impact that can precede serious veterinary, medical socioeconomic dilemma.

Objective: A few researches available about the prevalence of brucellosis therefore, the current study aims to investigate not only the prevalence but also increasing threats of brucellosis to the health's of human and bovines in desert Thal Pakistan.

Methods: A total number of 805 serum samples comprising 743 (n=499 Buffalo: n=244 cattle) bovines of all sex & ages and 62 human closely in-contact with animals were collected. All bovine's samples tested through Rose Bengal plate test (RBPT), and re-confirmed by the ELISA test. While human serum samples test carried out with Febrile Antigen Kit.

Results: The overall seroprevalence 3.7% in bovines and 17.3% in human. Brucella confirmed animals showed symptoms of abortion 77.8%, retention of placenta, repeatability 66.7%. While in current study brucella infected humans presented the symptoms of muscular pain, heart problems and low blood pressure (18.2%), headache (27.3%),undulant fever, arthritis (9.1%), and found miscarriages (54.5%) in spouse of infected persons.

Conclusion: Close in contact with Brucella-infected animals and use of raw milk is the major source for transmission of Brucellosis which causes abortion not only in human being but also in dairy animals.

Keywords: *Brucellosis, Abortion, Prevalence, Desert Thal* .

OP013

Enhancing Military Biodefense Research Capabilities against Biological Threats in Indonesia

Yogi Ertanto[1,4*], Randi Sagasiousman[3,4], Gogok Hariyanto[2,4], and Junaedi[4]

[1]*Department of Quality Assurance, Biology Vaccine Institute, Army Health Center; Bandung 40114*
[2]*Department of Production, Biology Vaccine Institute, Army Health Center; Bandung 40114*
[3]*Department of Technique, Biology Vaccine Institute, Army Health Center; Bandung 40114*
[4]*Biology Vaccine Institute, Army Health Center; Bandung 40114*

*Presenting author
Email: joghie614@gmail.com, Phone: +6281313959213

ABSTRACT

Background: Biological threats are serious threats facing Indonesian and international community. Biological threats can be naturally occurring, accidental, or deliberate in origin can cause catastrophic harm to Indonesian. They can cause substantial morbidity and mortality, disruption of trade leading to significant economic damage, civil disorder, and loss of public confidence in government. TNI as the main component of defense in the face of military threats needs to improve its biodefense capabilities and be involved in handling bio-threats.

Objective: This paper suggests that enhancing military biodefense research capabilities would ensure biodefense enterprise preparedness to prevent and reduce the impact of bio-incident.

Methods: TNI and Indonesian Government led innovation for Biodefense through robust scientific, technical, and industrial bases by investments in emerging technologies and integrated research and development (R&D) into national budget.

Results: Ensuring innovative defense science and technology base to support biodefense lead to ensure biodefense enterprise preparedness to reduce the impact of bio-incidents.

Conclusion: Enhancing TNI biodefense research capabilities can manage risk from biological threat to minimal level. To optimize this effort need to optimize TNI effort and collaborate with other government institution and others, domestically and internationally. So TNI can understand, prevent, prepare for, and respond from a full range of biological threat that can harm the Indonesian people.

Keywords: *Biological threats, TNI, military, biodefense research, bio-incident.*

OP014

Aviation Medicine Capacity on Facing Biological Threat in Indonesia Airport

Yuli Subiakto

Head of Pharmaceutical Air Force Institution

*Presenting author
Email: lafiau1945@gmail.com, Phone: +62 81320619748

ABSTRACT

Airports as entrance to a country are required to have high security procedures, especially in preventing outbreaks of infectious diseases spread by passenger, goods and carried goods. Outbreaks of disease are one of form real threat to national defense that can endanger national sovereignty, territorial integrity and national security. Biological agents are dangerous sources of outbreaks infectious diseases that have potential to be spread deliberately through airports for criminal, terrorism and warfare biological intentions. Based on data, spread of diseases in Indonesia, come from abroad such as SARS from China, Mers-CoV from Middle East, Avian Influenza from China and HIV from Africa etc. The geographical conditions of Indonesia with a population of more than 265 million people, spread across archipelago with a number of 17,500 people, and climate conditions that allow microorganisms to grow well, and number of flights in 2017 for domestic are 95,401,545 persons and international flights are 16,253,259 persons. Personel and goods movement in airport have a high vulnerability to threat spread of dangerous biological agents. In this time efforts to prevent entry of dangerous biological agents through airports have been carried out preventive efforts by placing plant and animal quarantine officers from the Ministry of Agriculture, Port Health Office from the Ministry of Health to handle passengers suspected of being sick due to diseases originating from dangerous biological agents (microbes). The development of air transportation in Indonesia is not all airports have quarantine officers and port health officers, so condition is prone to the spread of infectious diseases through airports. The Air Force as guardian of sovereignty in the air is close to airport as a center for air transportation, has personnel with flight surgeons, flight nurse qualifications, can be optimized for its role in helping prevent the entry of dangerous biological agents in airports that do not have port health officers. In the future, collaboration between port health and flight surgeons at the Air Force base is needed enhance capacity by prevention, detection and identification and response through fulfillment of personnel, education and training for readiness, fulfillment of facilities and means, fulfillment of software.

Keyword: *Biological Threat in Airport, Aviation Medicine, Enhance Capacity*

OP015

Transformation of Infectious Diseases and the Indonesian National Military Health Research Collaboration in Supporting National Health Security

Soroy Lardo[1]

[1]*Division of Infectious Diseases and Tropical Medicine, Department of Internal Medicine, Indonesia Army Central Hospital Gatot Soebroto*

*Presenting author
Email: soroylardo@gmail.com, Phone: +6282113860984

ABSTRACT

Background: The Indonesian National Military (Tentara Nasional Indonesia/ TNI) Health Research is a scheme to reinforce health security. Based on historical process since independence war, the role and function of TNI is different from other countries. The history of Indonesian independence with its guerrilla warfare has provided specified concepts, idea, strategic and managerial values along with TNI health contribution through the role of field health services to enhance military battle operation. Dealing with the changing battle pattern from conventional to modern, infectious disease associated with battle transformation has a role in biological and chemical wars. However, our understanding about infectious disease is not detached from interaction process between body system and military battle environment.

Objective: To develop research collaborations based on evidence base medicine to support national health security

Methods: TNI research is a process of research in general, which finds new innovation of military system and doctrine that becomes basic reference of activities as civil servants. The concept of innovation is a process of thought and scientific-based management of military resources; therefore, it can create futuristic mission on enhancing TNI ability as the users of power and the guardians of national defense.

Results: Integration and Collaboration of the TNI Health Research with the strengthening of infrastructure Research institutions by developing innovation research. The level of research development includes material and non-material aspects. On material aspects, which are associated with primary weapon and defense system or the alutsista (alat utama dan sistem persenjataan), the research and engineering has been very advanced. Non-material research is associated with the empowerment of various supportive scientific disciplinaries, which has important contribution in applying the main duties of TNI such as some applied activities of soldier assignment at the borders. In military medical sector, currently the ongoing research involves a study on malaria herbal drug as a prophylaxis for soldiers who are on duty at the border of malaria endemic region. The study is collaboration between the Institute of Tropical Disease, Airlangga University and Kimia Farma Corp. Results of the preliminary study have demonstrated the efficacy and safety of the first study, which was then continued to the second study to evaluate the efficacy, which is followed using a cohort method.

Conclusion: The TNI health research is a main gate to open the role and function of empowering the transformation of infectious disease, which is a threat to health security. Institutional power will support integration and networking with various domestic and foreign research networking that enhance the spirit and technology innovation based on health security principles.

Keywords: *Millitary Health Collaboration – National Health Security*

OP016

Microbiological Profile of Pathogenic Bacteria and Fungus on Children with Hirschprung's Disease and Their Complication in Dr. Soetomo General Hospital Surabaya

Noryanto Ikhromi[1], Muhammad Afif Sholehuddin[1*], Alpha Fardah Athiyyah[2], Eko Budi Khondori[3]

[1]Faculty of Medicine Universitas Airlangga, Surabaya 60132; [2]Department of Child Health, Faculty of Medicine Universitas Airlangga - Dr. Soetomo General Hospital, Surabaya 60132, [3]Department of Medical Microbiology, Faculty of Medicine Universitas Airlangga - Dr. Soetomo General Hospital, Surabaya 60132

*Presenting author
Email: muhammadafifsholehuddin@gmail.com Phone: +6281233863361

ABSTRACT

Background: Altered condition in the colon of the child with Hirschsprung's disease provides a suitable environment for the growth of pathogenic bacteria and fungus that contributes to their complication.

Objective: To describe the microbiological profile of pathogenic bacteria and fungus that have been identified in stool culture and the complication that it raised.

Method: This is an observative study using data collected by a total sampling of Children with Hirschsprung's disease in Dr. Soetomo General Hospital Surabaya within the period of 1st January 2013 – 31st December 2015.

Result: Among 47 children with Hirschsprung's disease, major pathogenic bacteria that have been identified are pathogenic *E. coli* (60%) and *Klebsiella oxytoca* (13.33%). Major pathogenic fungi that have been identified are *Candida spp* (61.54%), *Candida famata* (15.38%), and *Cryptococcus humicola* (15.38%). ESBL in *E. coli* 33% and in *Klebsiella oxytoca* 50%. Antibiotics that are highly susceptible for pathogenic *E. Coli* are Piperacillin- tazobactam (100%), Meropenem (89%), Amikacin (89%), Fosfomycin (100%), and Nitrofurantoin (100%); Antibiotics that are highly susceptible for *Klebsiella oxytoca* are: Cefoperazone sulbactam (100%), Ertapenem (100%), Imipenem (100%), Meropenem (100%), Levofloxacin (100%), and Ciprofloxacin (100%); The complication that mostly suffered were Malnutrition (68,75%), Enterocolitis (48.39%), and Sepsis (18.75%).

Conclusions: Pathogenic Bacteria and Fungus that have been identified in stool culture of children with Hirschsprung disease were mostly pathogenic *E. coli* (60%) and *Candida spp* (61.54%) respectively. Malnutrition in children was the major complication (68,75%) of Hirschsprung's Disease.

Keywords: *Hirschsprung's disease, Pathogenic Bacteria, Pathogenic Fungi*

OP017

Profile of Congenital Rubella Syndrome in Soetomo General Hospital Surabaya

Dionisia Vidya Paramita*, Nyilo Purnami

Otorhinolaryngology Head and Neck Surgery Department, Medical Faculty, Universitas Airlangga, Surabaya, Indonesia

Dionisia Vidya Paramita
Email: dionvy@gmail.com, Phone: +6285230232876

ABSTRACT

Background: Routine surveillance of Congenital Rubella Syndrome (CRS) can make a baby with CRS diagnosed immediately and get appropriate treatment.
Objective: The purpose of this study was to determine the prevalence and characteristics of patients related to CRS surveillance.
Method: CRS surveillance data for the period of 1 January - 31 December 2015 were examined. Babies who came to ORL-HNS OPD Division of Neurotology Soetomo General Hospital Surabaya was performed hearing screening and serological examination, surveillance forms of CRS cases were completed and analyzed.
Results: A total of 65 infants were included in surveillance. A total of 45 infants (69.2%) suspected of CRS with 2 infants (3.1%) were classified as certain CRS. Hearing loss was found in 36 infants (55.4%).
Conclusion: This study shows that surveillance still needs to be continued to capture more cases of CRS in the community and effective surveillance to detect hearing loss early.

Keywords: *Congenital rubella syndrome, Surveillance, Epidemiology, Infants*

OP018

Hyperbaric Oxygen in Animal Model of Rheumatoid Arthritis: Analysis of HIF-1α, ACPA AND IL-17a

Sapta Prihartono[1], Titut Harnanik[1,3],Tedy Juliandhy[2]

[1]*Department of Hyperbaric, Drs. Med. R. Rijadi S., Phys. Naval Health Institute, Indonesian Navy, Surabaya, Indonesia.*
[2]*Department of Electrical Engineering, Marine Faculty, Faculty, Hang Tuah University, Surabaya, Indonesia.*
[3]*Department of Doctoral Program, Medical Faculty, Airlangga University, Surabaya, Indonesia.*

*Presenting author
Email: titut.harnanik1972@gmail.com, Phone: 031-8439042

ABSTRACT

Objective: The aim of this study was to identify the effect of different doses of hyperbaric oxygen (HBO) exposure in reducing inflammation on Antigen and collagen-induced arthritis (ACIA) animal models through analysis hypoxia inducible factor-1α (HIF-1α), anti-cyclic citrullinated peptide antibody (ACPA) and interleukine 17a (IL-17a).
Materials and Methods: ACIA was animal model of rheumatoid arthritis (RA). 24 male Balb / C mice were divided into 3 groups, 8 mice did not receive HBO exposure as a control group (G1) and 16 mice received HBO exposure as treatment group (G2 and G3). G2 was ACIA which was exposed to HBO 2.4 ATA O_2 100% 90 minutes divided by 3 each 30 minutes intervals 2 times 5 minutes breathing with normal air for 10 consecutive days. G3 was ACIA which was exposed to HBO 2.4 ATA O_2 100% 90 minutes divided by 3 each 30 minutes intervals 2 times 5 minutes breathing with normal air for 5 consecutive days, break 5 days, 5 consecutive days. ACPA and IL-17a were measured by enzyme-linked immunosorbent assay (ELISA) technique. The expression of HIF-1α was measured by immunohistochemistry technique.
Results: There were significant decrease of ACPA levels, IL-17a levels and HIF-1α expression ($p < 0.05$) in G2 and G3 compared to G1. There was not significant decrease of ACPA levels ($p > 0.05$), there was significant decrease of IL-17a levels and HIF-1α expression ($p < 0.05$) in G2 compared to G3.
Conclusion: HBO 2.4 ATA O_2 100% 90 minutes divided by 3 each 30 minutes intervals 2 times 5 minutes breathing with normal air for 10 consecutive days more effective in reducing inflammation than exposure 5 consecutive days, break 5 days, 5 consecutive days in ACIA. HBO has therapeutic potential for the treatment of RA.

Keywords: *HBO, ACIA, HIF-1α, ACPA, IL-17a*

OP019

Identification, Distribution, and Drug Resistance of *Staphylococcus aureus* from Surgical Site Infection

Sulastrianah[1*], Nurhidayah[2], Waode Fasriati[2], Indah Puspitasari[2], Supiah A. Mulyawati[3], Yenti Purnamasari[3], Sapto Raharjo[4]

[1]Department of Pharmacology, Faculty of Medicine, Halu Oleo University, Kendari, 93231, [2]Medical Study Program, Faculty of Medicine, Halu Oleo University, Kendari, 93231; [3]Departement of Microbiology, Faculty of Medicine, Halu Oleo University, Kendari, 93231, [4]Departement of Biochemistry, Faculty of Medicine, Halu Oleo University, Kendari, 93231

*Presenting author
Email: sulastrianah@uho.ac.id, Phone: +6285242541601

ABSTRACT

Background: Surgical site infection is the most common form of Hospital Acquired Infections and *Staphylococcus aureus* is the most common pathogen that found in previous study.

Objective: The aim of this study was to identified, evaluating the distribution and drug resistance of *staphylococcus aureus* from surgical site infection as a part of an effort to control the Hospital Acquired Infection.

Methods: Bacterial identification using biochemistry method and confirm with Polymerase Chain Reaction. Bacterial samples were collected from surgical site infection of the patients and then compared with the bacterial samples that previously collected from the operator hands swab, surgical kit swab, water for handwash, and the air of operating theater, Intensive Care Unit, and inpatient department to evaluating the distribution of the *S. aureus*. The resistance of *S. aureus* was identified using Kirby-Bauer test.

Results: According to the result of bacterial identification, *S.aureus* is the most common bacteria found in surgical site infection of the patients. This bacteria was also found in the air of operating theater, inpatient room and operator hands swab. The result of resistance test shows that *S. aureus* from the surgical site infection of the patients resistance to ampicillin and streptomycin.

Conclusion: *Staphylococcus aureus* is the most common pathogen that found in surgical site infection and the distribution maybe from the air and operator hands. *S. aureus* in this study has a resistance to ampicillin and streptomycin.

Keywords: distribution, drug resistance, Hospital Acquired Infection, *Staphylococcus aureus, surgical site infection.*

OP020

The Relationship Between Cadre's Capacity and Assessing to the Fast Food Seller's Performance in Food Hygiene and Sanitation In Mokoau Primary Health Care, Kendari City

Tasnim[1*] and Maria Inge Lusida[2]

[1]*College of Mandala Waluya Kendari Health Sciences, Jl.A.H.Nasution no.G-37 Kendari 93232;*
[2]*Institute of Tropical Disease, Universitas Airlangga, Surabaya 60115*

*Presenting author
Email: tasnim349@gmail.com, Mobile Phone: +6282237658472

ABSTRACT

Background: Kendari city of Southeast Sulawesi Province has serious issues related to emerging a hundred of fast food sellers in 2017, including in Mokoau Health Care Centre area. However, there are only two health environmental staffs which have responsibility to control them there. Therefore, involving cadres or social work volunteers in the fast food control become very improtant.
Objective: This study aimed to identify communities who can participate in fast food control in Mokoau Health Centre in Kendari City.
Methods: This study was conducted in Mokoau Health Care Centre since March 2019. There were 17 active cadres who were recruited in this study and they controlled 35 fast food sellers. This study applied Quasy experimental study with The One-Group Pretest-Posttest Design. Independent variable of cadre's capacity was represented with educational level, duration of being social health workers, and the number of trainings. While, dependent variable was assessing for fast food seller's performance in hygiene and sanitation managemen. Data analysis used Wilcoxon Signed Rank, Mann-Whitney and Chi-Square tests.
Results: This study explained that the 17s cadres had various characteristic based on the capacity level. The majority of them passed from seniour high school (88.2%). There were only 11.8% of them who passed from Bachelor degree. There were 12 cadres (70.6%) who were active in social health work for more than three years in Mokoau Health Cetre area. The majority of cadres have gotten training related to health about fifteen times (85.7%). This study found significant effect of cadre's involvement in the fast food control to seller's performance change in fast food hygiene and sanitation managemen (p value = 0.002 < ά=0.05). Cadre who passes from bachelor degree (p=0.006) and were active in the socia health work for more than 5 years (p=0.003) had significant association with assesing for the seller's performance. Moerever, cadres who have gotten training more than 15 times affected to the seller's performance change in fast food hygiene and sanitation management (p value=0.007).
Conclusion: Involving cadres in the fast food control had significant effect to behavioural change to fast food sellers in Mokoau Health Centre area. The capacity of cadre who involved become important to make the right assessing for performance of the fast food sellers, including educational level, duration in social activities, and the number of training. Implication of this study that improving community volunteer's knowledge and skill related to fast food control technique becomes necesserly before they are given responsibility to supervise the fast food sellers.

Keywords: *Capacity, performance, Fast Food, Control.*

OP021

Genotypic Characterization of HIV-1 Derived from Art-Experienced Individuals in Buleleng Regency, Bali, Indonesia

Ni Luh Ayu Megasari[12*], Devi Oktafiani[1], Elsa Fitriana[1], Shuhei Ueda[2], Tomohiro Kotaki[3], Nasronudin[1,2,4], Soetjipto[1,2], Masanori Kameoka[3,5]

[1]Faculty of Medicine, Universitas Airlangga, Surabaya; [2]Indonesia-Japan Collaborative Research Centre for Emerging and Re-Emerging Infectious Diseases, Institute of Tropical Disease, Universitas Airlangga, Surabaya; [3]Department of Public Health, Kobe University Graduate School of Health Sciences, Hyogo, Japan; [4]Airlangga University Hospital, Surabaya; [5]Center for Infectious Diseases, Kobe University Graduate School of Medicine, Hyogo, Japan

*Presenting author
Email: ni.luh.ayu-2016@fk.unair.ac.id, Phone: +6285730992647

ABSTRACT

Background: Bali was the first province to report the case of human immunodeficiency virus (HIV) infection in 1987. It was placed sixth among Indonesian provinces with the highest cumulative number of HIV cases in 2017. As a popular tourist destination, the spread of genetic variants of HIV through international travel may become a cause for concern in Bali. Tourism is mostly concentrated in south Bali; thus, HIV circulating in less popular regions in north Bali, such as Buleleng Regency, may have viral characteristics different from that in south Bali.

Objective: To conduct genotypic characterization of HIV type 1 (HIV-1) among antiretroviral therapy (ART)-experienced individuals in Buleleg Regency, Bali.

Methods: Forty-three protease (PR), 40 reverse transcriptase (RT), 27 gag, and 23 env genes were successfully sequenced from 48 samples collected from study participants. Sequences were then analysed for subtype and drug resistance related mutations.

Results: Subtyping revealed CRF01_AE as the dominant circulating recombinant form (CRF) of HIV-1 in north Bali (97.9%; 47/48). Although no major mutation was detected in PR genes, several major mutations were identified in 4 out of the 40 RT genes (10%).

Conclusion: This study identified CRF01_AE as the dominant CRF in Buleleng Regency, Bali, similar to other regions in Indonesia. The presence of major drug resistance-associated mutations in RT genes suggests the emergence of HIV-1 drug resistance among ART-experienced individuals, particularly those receiving first-line therapies.

Keywords: *HIV-1, ART-experienced, north Bali, Indonesia*.

OP022

Management for Dengue Preventing and Control in 1st Fleet of Indonesia Todays

Gigih Imanta Jayantri[1], Putu Octavianty[2*]

[1]Head of 1st Fleet Medical Service
,[2]Chief of Medical Check Up in 1st Fleet Medical Service
1st Fleet Medical Services ,GunungSahari St No.67, Kemayoran, Central Jakarta

*Presenting author
Email: diskeskoarmada.i@gmail.com,Phone +6281317586007

ABSTRACT

Background: The expansion of dengue is expected to increase due to factors such as the modern dynamics of climate change, globalization, travel, trade, socioeconomics, settlement and also viral evolution. No vaccine or specific antiviral therapy currently exists to address the growing threat of dengue. Prompt case detection and appropriate clinical management can reduce the mortality from severe dengue. Effective vector control is the mainstay of dengue prevention and control. Surveillance and improved reporting of dengue cases is also essential to gauge the true global situation as indicated in the objectives of the WHO Global Strategy for Dengue Prevention and Control, 2012–2020.
Objective: to give a description Indonesia 1st Fleet in managing dengue prevention an control based on WHO Global Strategy for Dengue Prevention and Control 2012-2020 guideline.
Methodes: This is an a case study by evaluating Indonesia 1st Fleet's programmes in preventing and controlling dengue since 2016 until term 1 in 2019 compared with global strategy guidelines for prevention and control dengue 2012-2020. That contains diagnosis and case management, integrated surveillance an outbreak preparation, sustainable vector control, future vaccine implementation and basic operational and implementation research.
Result There are 3 aspects that 1st Fleet medical service had been done based on global strategy of management for dengue prevention and control. There's still many threat that we should find the solution for making effective prevention and control for our troops.
Conclusion: Management for dengue prevention and control should involvedmultiaspect, each programmes can't be effective if there was good and effective collaboration and prevention is not onlu adjust for medical staff but also responsible for all of the members of 1st Fleet.

Keyword : *Dengue Management, Prevent and Control, Indonesia 1st Fleet, WHO Global Strategy*

OP023

The Mechanism of the Effects of *Monascus Jmba* Rice on Increased Platelet Count in *Wistar* Rats Infected With Dengue Virus Serotype 3

Erwin Astha Triyono

Department of Internal Medicine, Faculty of Medicine - Airlangga University, Surabaya, Indonesia

*Presenting author
Email: erwintriyono@yahoo.com, Phone: +6281111111111

ABSTRACT

Background: to elucidate the mechanism of the effects of Monascus jmbA rice (MJR) on increased levels of platelets in DVI serotype 3 through changes in IL-3, IL-6, IL-11 and TNF-α.
Methods: It was a true experimental laboratory study using the randomized post-test only control group design. The study compared between groups of Wistar rats were being treated only with group IVD Wistar rats who experienced treatment followed by administration of MJR as well as groups of Wistar rats without any treatment as a control group.
Result: The increase in platelet count in the group treated with DVI + MJR was higher than that treated with only DVI and the difference was a significant ($p < 0.05$). Increased levels of TNF-α in the group treated with DVI + MJR were lower than that treated with only DVI and the difference was a significant ($p < 0.05$). The significance levels of the causal relationship of TNF-α with IL-6, TNF-α with IL-11 and IL-6 with platelets were 0.044 ($p < 0.05$), 0.029 ($p < 0.05$) and 0.041 ($p < 0.05$), respectively.
Conclusion: Monascus jmbA rice was shown to be capable of increasing platelet count through the role of TNF-α and IL-6 in Wistar rats infected with Dengue virus serotype 3.

Keyword: *Monascus jmbA rice, platelets, Dengue virus serotype 3*

OP024

Adherence to Anti-Retroviral Therapy and Its Associated Factors among Patients with HIV/AIDS in Central Java Indonesia

Eka Febriyanti*, Zakky Cholisoh, Erindyah Retno Wikantyasning, Guyup Sagotra, Iklil Habibi Mijil Anggoro, Enur Nuraeni

A Faculty of Pharmacy, Universitas Muhammadiyah Surakarta, Jl. A. Yani, Mendungan, Pabelan, Kartasura, Kabupaten Sukoharjo, Jawa Tengah 57162, Indonesia

*Presenting Author
Email: ekafebr@gmail.com, Phone: +6281227711816

ABSTRACT

Background: A high level of adherence (>95%) to anti-retroviral therapy is a primary determinant for viral suppression which will reduce the risk of viral transmission, its morbidity and mortality.
Objective: This study aimed to determine the level of adherence and factors enabling a high adherence behavior among patients with HIV/AIDS.
Methods: A cross sectional study was conducted to 130 adult patients with HIV/AIDS who received antiretroviral therapy for at least a month. Patients who were willing to participate were interviewed. Data was analyzed using chi-square test ($p<0.05$).

Results: Overall ≥ 95% adherence of the last month was 72,6%. Adherence was associated with male gender (p=0,042), lower duration of therapy (p=0,042) and the easy access (transportation) to hospitals (p=0,004). Young age, high level of education, spouse (marital status), good financial status, no smoking and taking alcohol habits, health insurance coverage, not experiencing adverse drug reactions, and support from family, spouse or friend were not associated with high adherence to ARV therapy.

Conclusion: Identifying the enablers of high adherence to anti-retroviral treatment can increase the likelihood of anti-retroviral related goal which in turn will reduce the disease related progression and death.

Keywords: *anti-retroviral, adherence, enablers, HIV/AIDS.*

OP025

Serotype Distribution and Clinical Manifestations of Dengue Virus Infection in Medan

Rina Yunita[1]*, Tetty A Nasution[1], Ayodhia Pitaloka[2], Eka Airlangga[3], Endang Sembiring[4], Franciscus Ginting[5]

[1]Department of Microbiology, Faculty of Medicine, Universitas Sumatera Utara/H.Adam Malik Hospital, Medan, Indonesia; [2]Department of Child Health, Faculty of Medicine, Universitas Sumatera Utara/H.Adam Malik Hospital, Medan, Indonesia; [3]Department of Child Health, Faculty of Medicine, Universitas Muhammadiyah Sumatera Utara, Medan, Indonesia; [4]Department of Internal Medicine, Faculty of Medicine, Universitas Sumatera Utara/Dr. Pirngadi Hospital Medan, Indonesia; [5]Department of Internal Medicine, Faculty of Medicine, Universitas Sumatera Utara/ H.Adam Malik Hospital Medan, Indonesia

*Presenting author
Email: rinayunita.usu@gmail.com, Phone: +62811639315

ABSTRACT

Background: Dengue Hemorrhagic Fever (DHF) is still become a major health problem in the world particularly in tropic and sub tropic country. Indonesia is one of the country with this disease burden and the disease outbreak had been occured in some periods. To enhance more data in dengue infection, we conduct research among dengue-infected patients in Medan City.
Objective: To describe the viral characteristic including serotype and genotype of dengue virus and several clinical manifestations from DHF patients in H Adam Malik General Hospital and several private hospital in Medan
Methods: Data was collected from period Juli to September 2017. Total of 33 blood samples was taken from DHF patients. Blood samples were sent to the Laboratoruim Terpadu FM-USU for serology test and PCR to determine viral serotype. For viral genotyping, DNA was reffered to Eijkman Institute for further testing.
Results: Based on clinical manifestations, the main complain of DHF patients admitted to hospital were high fever (>38.5°C) (73%), following haemorrhage manifestations (60%), most of DHF patients had no hepatomegaly (90%) and no signs of shock (97%). Number of platelets mostly found at 50,000-100,000 µ/L (87%) and hematocrite levels >40% (63%). Based on serology test (NS1, IgM and IgG anti-dengue) the highest positivity were found on IgG results. Predominant of virus serotype were DENV-3 and genotype 1 cluster.
Conclusion: Fever and hemorrhagic manifestation are still the major symptom of dengue infection. Information of serotype and genotype distribution can enhance development of effective vaccine in Indonesia.

Keywords: *Dengue Hemorrhagic Fever, serotype, Medan, dengue infection .*

OP026

Human Herpes Virus 8 Antibodies in HIV-Positive Patients in Surabaya, Indonesia

Devi Oktafiani[1], Ni Luh Ayu Megasari[1], Elsa Fitriana[1], Nasronudin [2], Maria Inge Lusida[3,4], Soetjipto [2,3,5]

[1]Doctoral of Medicine Program, Faculty of Medicine, Universitas Airlangga, Surabaya 60132, Indonesia; [2]Universitas Airlangga Hospital, Surabaya 60115, Indonesia; [3]Institute of Tropical Disease, Universitas Airlangga, Surabaya 60115, Indonesia; [4]Department of Medical Microbiology, Faculty of Medicine, Universitas Airlangga, Surabaya 60132, Indonesia; [5]Department of Medical Biochemistry, Faculty of Medicine, Universitas Airlangga, Surabaya 60132, Indonesia

*Presenting author
Email: devioktafiani99@gmail.com, Phone: +6285232897873

ABSTRACT

Background: Human herpesvirus 8 (HHV-8) infection is etiologically related to Kaposi's sarcoma. Antibodies directed against HHV-8 were detected in 80%–95% of HIV-seropositive patients through KS.HHV-8 serological tests in several countries in Southeast Asia such as Malaysia and Thailand, however no serological data is available in Indonesia.

Objective: This study seeks to examine the presence of HHV-8 antibodies in HIV-positive patients in Surabaya, Indonesia.

Methods: Ninety-one serum samples were collected from HIV-positive patients in Surabaya, Indonesia. Human immunodeficiency virus-positive serum samples were collected from 10 homosexual men, 25 intravenous drug users (IVDUs) and 56 heterosexuals. The serums were then tested for the presence of HHV-8 antibody by using sandwich ELISA (Abbexa Ltd, Cambridge, UK).

Results: The 91 HIV-infected samples were tested for antibodies to HHV-8 using an enzyme-linked immunosorbent assay. Antibodies of HHV-8 were detected in 7/91 (7.7%) of the samples. According to gender, six men (85.7%) and one woman (14.3%) tested positive for HHV-8 antibodies. No correlation was found regarding gender and age in this study. The antibodies of HHV-8 were detected in 6/7 (42.8%) male intravenous drug users (IVDUs), while 2/7 (28.6%) were found in both homosexual and heterosexual samples.

Conclusion: This study found the presence of HHV-8 antibodies in 7.7% of patients in Surabaya, Indonesia. This finding was higher than other Southeast Asian countries. For patients with a positive result, recommendations can be made to prevent HHV-8 infection.

Keywords: *HHV-8 antibody, HIV-positive, Surabaya, Indonesia.*

OP027

Analysis of Tuberculosis Program Management in Primary Health Care: A Qualitative Study

Ni Njoman Juliasih [1*]

[1]*Club Study Tuberculosis, Institute of Tropical Disease, Universitas Airlangga, Surabaya 60115*

*Presenting author
Email: njomanjuliasih@staf.unair.ac.id, Phone: +628113642237

ABSTRACT

Background: This study discusses the analysis of TB program management at Perak Timur Primary Health Care (PHC) and Sawahan PHC in Surabaya. Early detection and adequate treatment can prevent transmission and improve program control.
Objective: This study aims to find out the tuberculosis program in the Primary Health Care in Surabaya was managed.
Methods: The research method used is qualitative research. Method of data collection was done by interviewing tuberculosis officers about TB program and observations at the PHC.
Results: The results of the study showed that case finding in Perak Timur PHC and Sawahan PHC was passive-active. Perak Timur PHC has Rapid Molecular Testing facilities while Sawahan PHC have to go to Center for Health Laboratory if Rapid Molecular Testing is needed. In terms of treatment, patients at the Perak Timur PHC would come according to an agreement with TB officer, while at the Sawahan PHC, patients have to come once a week every Monday. Officer at the Perak Timur PHC tended to accommodate the needs of TB patients compared to officer at the Sawahan PHC. TB officer at Perak Timur PHC did not force patients to come every week; they could come once every two weeks or more as long as there was communication and they did not skip the medication. The level of adherence to taking medication in two health centers is good but there are a number of patients who have not really understood the frequency of taking medication.
TB officer at Sawahan PHC stated that there was never a stock of drugs because they would make a request before the drugs ran out. The Perak Timur PHC has experienced a run out of anti TB drug (ATD) stock and the strategy implemented is to borrow drugs from other Health Care. The recording and reporting system in both primary health care services is the same.
Conclusion: Generally, both Primary Health Care having good TB program management but Perak Timur PHC tends to flexible towards patients while Sawahan PHC tends to more strict toward patients.

Keywords: *analysis, management, tuberculosis program, primary health care*

OP028

Added Value of Bleach for Tuberculosis Microscopy Diagnostic in Limited Resources Setting

Erike A.Suwarsono[1*], Siti Nur Aisyah Jauharoh[2]

[1]*Department of Microbiology, Faculty of Medicine, UIN Syarif Hidayatullah, Jakarta, Indonesia, 15419;*
[1]*Department of Clinical Pathology, Faculty of Medicine, UIN Syarif Hidayatullah, Jakarta, Indonesia, 15419*

*Presenting author
Email: erike.suwarsono@uinjkt.ac.id, Phone: +628165426218

ABSTRACT

Background: According to WHO, Indonesia is one of high burden tuberculosis (TB) countries. The utilization of molecular diagnostic for TB has been setting throughout Indonesia, however as an archipelago country, there are still a lot of remote areas that only depend on microscopic smear to diagnose TB, tough the value is poor. Bleach is known as an excellent disinfectant and might be used to increase the value of microscopy diagnostic.

Objective: The study aimed to evaluate the added value of 1% bleach to increase the positivity rate of TB compared to conventional stain.

Methods: The study conducted in 70 subjects who were suspected as TB from various primary care as limited setting representation in West Java, Indonesia. The sputum was collected for 2-3 ml, and divided into two parts, both of them were stained using Ziehl Neelsen (ZN) method, however the first part was only stained and the second was added 1% bleach before staining. Bleach was added in same volume with sputum and incubated for 10 minutes. After 10 minutes, the sputum was stained as usual ZN method.

Results: The result showed that the positivity rate of 1% bleach was higher than the ZN stain only. The positivity rate for ZN only was 39 (55.7%) compared to added 1% bleach was 63 (90%), and significantly different by Mann-Whitney U test (p=0.000).

Conclusion: Bleach can be used as an alternative agent to improve the positivity result of TB smear in limited resources setting that only depends on microscopy diagnostic.

Keywords: *TB smear, ZN, positivity rate, bleach.*

OP029

Congenital Rubella Syndrome Profile in Audiology Outpatient Clinic of Dr. Soetomo Hospital Surabaya, Indonesia

Elsa Rosalina*, Nyilo Purnami

Department of Otorhinolaryngology – Head and Neck Surgery, Faculty of Medicine, Universitas Airlangga – Dr. Soetomo Hospital, Surabaya 60285

*Presenting author
Email: elsarosaline@gmail.com, Phone: +6285645373200

ABSTRACT

Background: Congenital Rubella Syndrome (CRS) consists of hearing impairment, ophthalmology abnormalities, and congenital heart disease in children, resulting from rubella virus infection during pregnancy. Rubella vaccine just yet been implemented in Indonesia since 2017, and needed to be evaluated as strategy for preventing CRS.
Objective: This study aimed to report profile of CRS patients in Audiology Outpatient Clinic at our hospital.
Methods: A descriptive study from patient's medical record was conducted in Dr. Soetomo Hospital, Surabaya, Indonesia, from January 2016 to December 2017. CRS was categorized according to World Health Organization (WHO) classification. Suspected children under 1 year old with CRS burden was assessed by clinical examination using Otoacoustic Emission (OAE) and rubella antibody test.
Results: Ninety five children were suspected with CRS, thus classified as laboratory-confirmed CRS cases (58,95%), as clinically confirmed CRS cases (15,79%), and as discarded CRS cases (25,26%). Forty nine percent of suspected children were male. Clinical manifestations of CRS included combination of congenital heart disease and hearing impairment (17,89%), combination of congenital heart disease, ophthalmology abnormalities, and hearing impairment (16,84%), and combination of hearing impairment and ophthalmology abnormalities (13,68%), and icterus 24 hours post partum (45,26%).
Conclusion: The profile of CRS patient data show a high burden of CRS in Surabaya, Indonesia. These implies the urgent need for national rubella vaccination program in Indonesia. Continuing surveillance is essential to monitor the national burden of CRS.

Keywords: *Congenital Rubella Syndrome, Profile, Indonesia, Descriptive study, Rubella vaccine*

OP030

First Case of Ciprofloxacin Resistant *Campylobacter Jejuni* from Blood Culture of Pediatric Patient with Biliary Atresia at Dr. Soetomo Hospital Surabaya, Indonesia

Rahmi Dianty[1*], Daniel Edbert[1,2], Amina Thayyiba[1],
Dicky B. Widhyatmoko[1], Eddy B. Wasito[1]

[1] *Clnical Microbology, Faculty of Medicine, Airlangga Universiy, Surabaya 60115;*
[2] *Department of Microbiology, Faculty of Medicine and Health Science, Atma Jaya Catholic University, Jakarta 12930*

*Presenting author
Email: rahmidianty@gmail.com, Phone: +6282153674232

ABSTRACT

Background *C. jejuni* is known as the cause of zoonotic and foodborne infection. It is mainly introduced to human by poultry, domestic animals, dairy products, and food or water contaminated with the bacteria. Here we present a case of a child with biliary atresia who had possible zoonotic bacteremia caused by ciprofloxacin resistant *C.jejuni*.

Case Review An 8 month-old boy was referred to Dr. Soetomo Hospital Surabaya with fever, jaundice, and ascites. He was diagnosed with inoperable biliary atresia. Upon house visit, we found out that there were several chicken and bird coops within 200 meter radius of patient's house. Blood culture was obtained after 7 days of hospitalization and showed positive after 47 hours of incubation at 35°C with aerobic BACTEC® BD® blood culture system. Direct Gram stain from BACTEC® pediatric blood culture showed Gram negative coccobacilli with few seagull-appearance morphology. It was identified as *Campylobacter jejuni ssp. jejuni* with 97% probability using VITEK 2® identification system (Biomerieux™) and VITEK 2® NH® ID card. This Isolate was resistant to Ciprofloxacin

Conclusion Campylobacter blood infection may exhibit longer time to positivity. In this case, severe infection of Campylobacter may be promoted by biliary atresia and hepatic failure.

Keywords: *Campylobacter jejuni, bacteremia, biliary atresia, ciprofloxacin resistant*

OP031

Characterization of Hepatitis B Virus_Surface Gene Mutations

Hotimah Masdan Salim[1*], Maharani Pertiwi Koentjoro[2], Aisyah[1,3], Soetjipto[4]

[1]*Faculty of Medcine, University of Nahdlatul Ulama Surabaya, Surabaya*
[2]*Medical Laboratory Technology Program, University of Nahdlatul Ulama Surabaya, Surabaya*
[3]*Department of Medical Rehabilitation, RSI Ayani Surabaya*
[4]*Department of Chemistry, Faculty of Science and Technology, Universitas Airlangga, Surabaya 60115;*

*Presenting author
Email: dr.hotimah@unusa.ac.id, Phone: +6282233625453

ABSTRACT

Background: Hepatitis B Virus (HBV) is a causes for severe liver disease which are uses mechanisms to escape for immune respons including the use of mutations in the genome. HBV viral capsid composed mainly by core protein (HBc) that consist of an N-terminal domain (NTD) and a C-terminal domain (CTD), which are linked by a flexible linker region. HBc plays multiple essenstial roles in every step of the viral lifecycle. Mutation in this domain resulted in false-negative HBV detection.
Objective: To reduce the possibility of wrong result, we evaluated which part domain that susceptible to mutations.

Methods: A total of 64 HBc gene of HBV were identified on the NCBI (National Center for Biotechnology Information) but only 14 data were considered eligible for analysis. The inclusion criteria were the sequence of nucleotide bases using sequencing methods and HBV isolated from host range (mammals and birds). Using the MEGA7, DnaSP 5.1 and Multalin ver. 5.4.1 programs.

Results: We found that the polymorphic base of the HBc gene causing mutation varied among HBV.Mutations in the HBc gene associated with CTD. Mutations that occur include in point mutations, causing a change of capsid assembly. That is mean, capsid virus could not observed by regular detection. The approach of phylogenetic tree analysis shows that the mutation in the HBc region is the result of variations different geographical regions and host range.
Conclusion: Information generated from this study can be useful as a rational design of molecular tests for rapid screening of HBV infection—related mutations that are expected to contribute to the control of HBc in Indonesia.

Keywords: *Hepatitis B Virus, Virus_surface gene, mutations*

OP032

Prevalence Latent Tuberculosis Infection in Haemodialysis Patients: A Systematic Review

Hamidah Retno Wardani[1]

[1]*Master of Tropical Medicine, Faculty of Medicine, Airlangga University, Surabaya*

[*]Presenting author
Email: Hamidah.retno.wardani-2018@fk.unair.ac.id/hamidahretno77@gmail.com, Phone: 082245091599

ABSTRACT

Background: Patients with end-stage renal disease (ESRD) undergoing hemodialysis show an increased risk of becoming active TB 6 to 25 times higher than in the general population. This is caused by a decrease in the immune system. The importance of screening using diagnostic tests such as Tuberculin Skin Test (TST) and QuantiFeron TB-Gold (QFT-G) as well as appropriate treatment in hemodialysis patients can prevent the increase in LTBI to active TB.

Objective: To determine the prevalence of Latent Tuberculosis Infection (LTBI) cases in hemodialysis patients using TST and QFT-G tests.

Methods: Using Systematic Review to determine the prevalence of LTBI in hemodialysis patients using the Prefered Reporting Items for Systematic Review and Meta-analysis (PRISMA) protocol.

Results: the study came from 69 related articles and obtained 4 articles using Randomize Control Trial (RCT) that met the criteria involving 405 ESRD patients undergoing hemodialysis. Studies show that the prevalence of LTBI using diagnostic Tuberculin Skin Test (TST) (cut off ≥ 10 mm) and QuantiFERON-Tuberculosis Gold (QFT-G) shows the results of TST + / QFT-G + 42 people, TST + / QFT-G - negative 14 people, TST- / QFT-G + 69 people and the rest were negative in both diagnostic examinations.

Conclusion: The prevalence of LTBI in patients undergoing hemodialysis in several developed countries with TST (+) results of 13% and QFT (+) 17%. LTBI with negative TST results cannot simply be ruled out and a combination of diagnostic examinations using QFT-G is more recommended. LTBI screening and treatment should be performed on hemodialysis patients with the aim of preventing the progression of TB into active and secondary infections.

Keyword: *Latent Tuberculosis infection, hemodialysis, TST, QFT-G, ESRD.*

OP033

'TOUCH DNA' Analysis as an Alternative Substance of Forensic Examination through CODIS STR

Ahmad Yudianto[1,2,3], Indah Nuraini M[1,3], Abdul Hadi Furqoni[1,3,*] , Simon Martin Manyanza Nzilibili[1,4] & Pudji Harjanto[1]

[1] *Forensic Science Program, Post Graduate School, Universitas Airlangga, Surabaya – Indonesia.*
[2] *Department of Forensic Medicne and Medicolegal, Faculty of Medicine, Universitas Airlangga, Surabaya – Indonesia*
[3] *Human Genetic Laboratory, Institute of Tropical Disease, Universitas Airlangga, Surabaya – Indonesia.*
[4] *Ministry of Health, Community Development, Gender Elderly and Children, Dodoma – Tanzania.*

Presenting author*:
Email : yudi4n6sby@yahoo.co.id

ABSTRACT

Introduction: Identification through DNA analysis is an accurate diagnostic tool. DNA analysis is carried out through Variable Number Tandem Repeat (VNTR) and Restriction Fragment Length Polymorphisms (RFLP). VNTR is tested based on certain repeated base sequences. DNA replication zone with a base size of less than 1 kb is termed as 'microsatellite' Short Tandem Repeat (STR) (Connor, 1997).
All these years, forensic specimens are widely used in DNA testing to identify blood spots, sperm spots, vaginal swabs, buccal swabs and bones (Kusuma, 2004). At the crime scene, the perpetrator often accidentally touched the surrounding objects, so there is a transfer of trace evidence to the objects. To date, personal identification through examination of touch DNA (contact trace DNA) in Indonesia has not been widely known.
Materials and method: Laboratory observation was carried out to prove identification through DNA isolation from touch DNA objects at the CODIS STR loci using momentary research design. This study used DNA from volunteers who have signed the informed consent, samples through buccal swab and property, with a total of 10 samples.
Results and Discussion: It was obtained the mean levels of DNA [UV-Visible Spectrophotometer] buccal swab: 167.89 ± 85.71 µg/ml, watch swab: 59.19 ± 5.58 µg/ml, mobile phone swab: 38.09 ± 2.12 µg/ml and the purity of DNA buccal swab: 1.79 ± 0.71, watch swab: 1.69 ± 0.76, mobile phone swab: 1.53 ± 0.56. The visualization of PCR amplification with the Polyacrylamid Agarose Composite Gel Electrophoresis [PAGE] with Silver Staining on standard primer of CODIS STR [THOI, TPOX, CSF1PO] showed all property swab samples indicating [+] 100% detectable and allele profiles in all samples indicating matched/identical through positive control K562.
Conclusion: 'DNA Touch' through property swab [watch and mobile phone] can be an alternative substance in forensic identification. The visualization of Polymerase Chain Reaction [PCR] at the CODIS STR loci on all samples of buccal swab and watch swab shows positive detection results

Keyword: *Touch DNA, CODIS STR, Identification*

OP034

Comparison of the Quality of Life of TB and MDR-TB Patients

Ni Njoman Juliasih[1], Erina Sudaryati[2*]

[1]*Club Study Tuberculosis, Institute of Tropical Disease, Universitas Airlangga, Surabaya 60115*
[2] *Faculty of Economy and Business, Universitas Airlangga, Surabaya*

Presenting author*
Email: erina.sudaryati@feb.unair.ac.id

ABSTRACT

Background: Tuberculosis is still the main cause of mortality and morbidity is a disease that gets a lot of government attention, so many programs are made to prevent it. The government has a free treatment program for TB and MDRTB patients to recover. Most TB patients come from poor or poor families with a lifestyle that is far from healthy. Therefore, this disease has a close relationship with the quality of life of patients, both before suffering and after suffering from TB. At present many patients are resistant to drugs (MDR), which are increasing and becoming a problem in government programs to eradicate TB.
Objectives: This study aims to determine the impact of MDRTB on the quality of life of patients. The population in this study was all pulmonary TB patients who were treated at the largest hospital in East Java.
Methods: Data was collected using a questionnaire. The population in this study was MDRTB and TB patients who were treated at the largest hospital in East Java. The simple accidental random sampling technique with a sample of 89 people was divided into two groups: 46 MDRTB patients and 43 TB patients.
Results: Patients who live in cities have 42% and those from regions 58%. The quality of life of MDRTB patients is worse than TB patients. The data were tested by chi-square test and the results were obtained from respondents in TB, 63% quality of life was poor and had a good quality of life 37%, whereas from respondents on MDRTB, 78% quality of life bad and who have a good quality of life 22%.
Conclusion: More than half of patients receive further treatment, more than half do not get family support, more than half experience depression.

Keywords: *MDR-TB, TB, Quality of Life*

OP035

Sero-Epidemiology of Leptospira Infection in A Cattle Population

Susanti[1,] Adjid, RM.A[1],., Noor, S.M[1],., Ratnawati, D[2]., Dikman,D[2]., Pamungkas, D[2].

[1]*Balai Besar Penelitian Veteriner, PO Box 151, Bogor 16114*
[2]*Loka Penelitian Sapi Potong, Grati,*

Presenting author*
Email: ery_purboyudono@yahoo.com

ABSTRACT

The aim of this research is to study epidemiology of Leptospira infection in a closed cattle population. The epidemiology, including prevalence of infection, clinical symptoms, breeds infected, majority of serovar of Leptosrpira caused infecton, and its possible transfecction to human. A number of 1000 cattles at the farm were used for the study. Among them 980 cattle and 58 workers were collected for serum samples. All the serum samples were tested against Leptospirosis using Micro Agglutination Test (MAT). The antigen used for the test were fourteen serovar of Leptospira as antigen, namely *Leptospira interrogans* serovar icterohaemorrhagiae, javanica, celledoni, canicola, ballum, pyrogenes, cynopteri, rachmati, australis, pomona, grippotyphosa, hardjo, bataviae, dan tarassovi. The data was analysed using descriftive epidemiology. The study showed that the prevalence of leptospirosis in cattle was 62 (6,32%) cattle with dominated by serovar Tarrasovi infection. The infection was spreads in all breed of cattle, namely Bali cattle 12 (1,22%), Madura cattle 7 (0,71%), and Indonesian Ongole cattle 43 (4,38%). Among breeds, the most prevalent of Leptospirosis was in Bali cattle (7,55%), PO (7,05%) dan Madura (3,6%). No human indicated had infection by Leptospira. The dynamic of Leptospira infection in a cattle population, possible breed resistance to infection, and human health aspects was discussed in this paper.

Keywords: *Leptospira, leptospirosis, cattle, epidemiology, serology*

OP036

Brucellosis is a Neglected Zoonoses Diseases in Cilawu, West Java

Risqa Novita[1*], Nurika Trihastuti [1]

[1]*Centre of Biomedical and Basic Health technology, National Health Institute Research Development, Ministry of Health, Jakarta, Indonesia*

*Presenting author
Email: risqa@litbang.depkes.go.id, Phone: +6282113615743

ABSTRACT

Background: Brucellosis is a neglected zoonoses disease, including in Indonesia. Indonesia is still endemic for animal brucellosis, but the data of human brucellosis still unknown until today. Eradicating of zoonoses diseases need one health approach, also in brucellosis. Animal brucellosis in Indonesia will could not eradicated if human brucellosis is still happen. The latest publication data in 1998 showed that prevalence human brucellosis in abbatoir workers in DKI Jakarta was 18.3%., but we did not have earlier data in other community of animal husbandry because human brucellosis is neglected in Indonesia.

Objective: To screening data of early detection of human brucellosis and to estimated the correlation between vaccinated brucella in animal and the incidens of brucella in livestock community in Cilawu

Methods: blood specimen from livestock worker in community, we did Rose Bengal test (RBT) for the blood, and the result of the RBT we correlated with the vaccination against brucella in the animal. The data we analyzed by SPSS to know the odd ratio of the correlation

Results: The RBT test show that about 57 blood specimen, about 4,7 % were positive to human brucellosis. The OR test showed that if the farmer do not vaccinated their animal against brucella, they will infect by brucella as 3 higher than the farmer who vaccinated their animals.

Conclusion: To eradicated brucellosis in Indonesia, the farmer should vaccinated their animal with brucella vaccination.

Keywords: *Human brucellosis, Rose Bengal test, Vaccination*

OP037

Effectiveness of Blue Diode Laser for Biofilm Reduction of *Staphylococcus aureus* based on Age Variations in Bacterial in Vitro

Suryani Dyah Astuti[1]*, Hafidiana[1], Anak Agung S. Pradana[1] and Samian[1]

[1]*Department of Physics, Faculty of Science and Technology, Universitas Airlangga, Surabaya 60115 ;*

*Presenting author
Email: suryanidyah@fst.unair.ac.id, Phone: +6282143211353

ABSTRACT

Background: Staphylococcus aureus is a Gram positive bacterium that is able to form biofilms and cause infections in humans. Increased infection occurs when biofilm growth increases. One effective method for reducing bacterial biofilms is the photodynamic inactivation (PDI) method. The effectiveness of PDI at various ages of biofilms depends on radiation energy density.

Objective: This study aims to determine the effect of biofilm age on various energy densities of blue laser diode irradiation which is effective for reducing Staphylococcus aureus biofilm.

Methods: The light source used is a blue diode laser (430,000 ± 0,007) nm with a power of (27.65 ± 0.01) mW. The study consisted of group C0, control at various ages of biofilms (0; 8; 16; 24; 32; 40; 48) hours without laser treatment; group B1 laser treatment at various irradiation times (30, 60, 90, 120; 150) s. The laser exposure distance is (1.00 ± 0.05) cm perpendicular to the target. The method used is the ELISA test to calculate the OD595 value and SEM test and fluorescent test to determine cell death morphologically.

Results: The Anava test results show that there is an effect of laser radiation energy meeting on biofilm reduction. At the dose of 21.16 J / cm2 the most optimal reduction was obtained, namely at 8 hours age biofilm at 93.62%, 16 hour biofilm 93.31%, 24 hour biofilm 86.09%, 32 hour biofilm 81.56 %, 40 hours 56.16% biofilm and 48 hours 30.30% biofilm.

Conclusion: So the effectiveness of PDI to reduce biofilms at various ages depends on the radiation energy meeting.

Keywords: *biofilm age, Staphylococcus aureus, laser diode, energy density, reduction*

OP038

Strains Distribution of *Mycobacterium tuberculosis* complex in Java

Nastiti Intan Permata Sari[1]*, Ni Made Mertaniasih[2], Soedarsono[3], Fumito Maruyama[4], Tomotada Iwamoto[5], Kentaro Arikawa[5], Manabu Ato[6], Satoshi Mitarai[7,8], Hirotada Mori[9], Ai Muto[9]

[1]Doctoral Program of Medical Science, Faculty of Medicine, Universitas Airlangga, Surabaya, 60132, Indonesia; [2]Department of Clinical Microbiology, Faculty of Medicine, Unive rsitas Airlangga, Surabaya, 60132, Indonesia; [3]Department of Pulmonology and Respiratory Medicine, Faculty of Medicine, Universitas Airlangga, Surabaya, 60132, Indonesia; [4]Department of Microbiology, Graduate School of Medicine, Kyoto University, Japan; [5]Department of Microbiology, Kobe Institute of Health, Chuo-ku, Kobe, Japan; [6]National Institute of Infectious Diseases, Tokyo, Japan; [7]The Research Institute of Tuberculosis, Japan Anti-Tuberculosis Association, Tokyo Japan; [8]Nagasaki University Graduate School of Biomedical Sciences, Nagasaki, Japan; [9]Graduate School of Biological Sciences, Nara Institute of Science and Technology, Nara, Japan

*Presenting author: Nastiti Intan Permata Sari
Email: Nastitipermata@gmail.com, Phone: +6285735190853

ABSTRACT

Background: In general, tuberculosis is caused by the *Mycobacterium tuberculosis complex* which can attack the human lungs and some of them can attack others, which are called extra pulmonary tuberculosis. Now, several strains were found can attack the human lungs including Beijing strain, Euro American strain, and Indo-Oceanic strain. More Beijing strain have been reported in West Java.

Objective: To identify *Mycobacterium* strains in Java Island which correlate with drug resistance data.

Methods: One hundred and ten of pulmonary tuberculosis patient isolates were collected. All of the samples were examined by the molecular method to identify *Mycobacterium* Beijing strains.

Results: There were 60,9% Beijing strains in Java Island. Euro American and Indo-Oceanic strains also were found in this island. More isolates with drug resistance were found in Beijing strain.

Conclusion: More Beijing strain than the wild type of *Mycobacterium tuberculosis* has been found in the isolates with drug resistance.

Keywords: *Pulmonary tuberculosis, Mycobacterium isolates, strain*

OP039

Cocoa Extract Consumption Inhibited *Shigella Dysenteriae* Growth in Mouse Intestine

Ariza Budi Tunjung Sari[1*], Misnawi[1], Teguh Wahyudi[1], Diana Chusna Mufida[2], Mohammad Rizal[2]

[1] *Indonesian Coffee and Cocoa Research Institute (ICCRI)*
Jl. PB Sudirman 90, Jember 68118, East Java, Indonesia
[2] *Faculty of Medicine, Jember University*
Kampus Tegalboto, JL. Kalimantan no. 37, East Java, Indonesia

*Presenting author: ariza.bts@gmail.com, phone +6281380726454

ABSTRACT

Background Infection of *Shigella dysenteriae* is haunting tropical region. Cocoa polyphenol has been reported for its inhibitory activity against bacteria growth, both gram-positive and negative.
Objective In vitro study against *S. dysenteriae* had been established in the previous work. In this study, cocoa extract containing polyphenol was tested in vivo.
Methods Adult Swiss-webster mice were infected with *S.dysenteriae* and administered with cocoa extract every 24 hours for three consecutive days at concentration 0.65, 1.3 and 2.6 mg/ml. Ciprofloxacin solution was used as positive control and sterile distilled water as negative control. After terminated, colon washing was performed and the liquid was inoculated on SS agar. The number of colonies grew on agar was then enumerated.
Result The trial indicated that *S.dysenteriae* colony growth were inhibited after treatment of cocoa extract. At concentration 1.3 mg/ml, cocoa extract showed the same potency as Ciprofloxacin, while at concentration of 2.6 mg/ml cocoa extract eliminated any colony.
Conclusion This study demonstrated that cocoa extract has a potential antibacterial property towards *S. dysenteriae*.

Keywords: *cocoa, dysentery, anti-bacteria, polyphenols, ciprofloxacin*

OP040

High Feasibility Laboratory Detection of Pathogenic *Leptospira* from Urine Samples in Indonesia

Farida D. Handayani[1*], Lisa Novipuspitasari[2*], Arum Sih Joharina[1], Nur Hidayati[1], Aprilia Safitri[1], Restu K. Saban[1], Emily Hannah[3], David Aucoin[3], Marga Goris[4], M. Hussein Gasem[5,6]

[1]*Institute for Vector and Reservoir Control Research and Development (IVRCRD), National Institute of Health Research and Development (NIHRD), The Ministry of Health Republic of Indonesia;*
[2]*Sunan Kalijaga Hospital, Demak Regency, Central Java, Indonesia;*
[3]*Department of Microbiology & Immunology, School of Medicine, University of Nevada Reno, United States;*
[4]*Amsterdam University, Netherland;*
[5]*Dr. Kariadi Hospital, Semarang, Indonesia;*
[6]*Center for Tropical and Infectious Diseases (CENTRID), Faculty of Medicine, Diponegoro University, Semarang, Indonesia*

ABSTRACT

Background: *Leptospira interrogans* is the causative agent of leptospirosis, a devastating disease endemic in Southeast Asia. It has been an increasing public health issue in Indonesia. Currently, diagnosing leptospirosis is complicated and often times the disease is misdiagnosed. A major challenge to reduce leptospirosis morbidity and mortality is improving diagnostic tools. In addition to nonspecific clinical features of leptospirosis, laboratory diagnosis is challenging because of the bacteria hide quickly to the targeted organ and the antibody rises very slowly caused rapid serologic confirmation difficult. We investigated the potential of non-invasive urine samples as a source for detection of leptospirosis in early stage of infection.
Methods: Nineteen suspected leptospirosis patients' nonetheless negative results of IgM rapid test were evaluated for molecular leptospirosis detection by targeting pathogenic *Leptospires* LipL32 gene. The PCR assays were performed by End Point PCR Assay, SYBR Green qPCR Assay and Taqman Probe qPCR Assay. To determine the sensitivity of the assay, we evaluate the Limit of Detection (LOD) of the qPCR assays.
Results: Although all the IgM antibody rapid test of the suspected leptospirosis samples were negative, we found five out of nineteen suspected leptospirosis samples were positive by End Point or conventional PCR. In addition, ten out of the nineteen suspect samples were positive by SYBR based qPCR and eleven out of total samples were confirmed positive by Taqman Probe qPCR assay. In addition, the lowest genome equivalent detected was 8 GE/µl.
Conclusions: This study demonstrated the potential of urine patients to be used as a choice of samples for early detection of leptospirosis. The *Leptospires* LipL32 were detected in the patients' urine prior the IgM arose in the detected level. The Taqman Probe LipL32 qPCR assay is the robust tools for an early of pathogenic *Leptospires* was able to find disseminate in the urine.

Keywords: *Leptospirosis, LipL32 gene, end point PCR, SYBR green, Taqman Probe qPCR,*

OP041

Indonesian Plants Exhibited Antiamoeba against *Entamoeba Histolytica* by Enzymatic Assays

Myrna Adianti[1,2] , Putri Aprilia[2] , Defi Kartika Sari[2], Fendi Yoga Perdana[3], Lidya Tumewu[2], Aty Widyawaruyanti[2,4], Achmad Fuad Hafid[2,4*]

[1]*Faculty of Vocational Study, Universitas Airlangga, Surabaya, 60286, Indonesia;* [2]*Natural Product Medicine Research and Development, Institute of Tropical disease, Universitas Airlangga, Surabaya, 60115, Indonesia;* [3]*Post Graduated Student of Faculty of Pharmacy, Universitas Airlangga, Surabaya, 60286, Indonesia;* [4]*Department Pharmacognosy and Phytochemistry, Faculty of Pharmacy, Universitas Airlangga, Surabaya, 60286, Indonesia.*

*Presenting author
Email: myrnaadianti@yahoo.com, Phone: +62 811307454

ABSTRACT

Background: *Entamoeba histolytica* is a protozoan parasite and the causative agent of amebiasis. It is estimated approximately 1% of humans are infected with *E. histolytica*, resulting in an estimate of 100,000 deaths annually. Current treatment for amebiasis infection are known to have side effect such as nausea, headache, urine became dark color, and etc. Therefore new medicine is needed to overcome these side effects and natural product is a potential alternative as source of antiamoebic compounds. L-cysteine biosynthetic pathway is essential for various cellular activities, including the proliferation and anti-oxidative defense of *E. histolytica*. Since the pathway, consisting of three reactions catalyzed by serine acetyltransferase (SAT), cysteine synthase (CS, *O*-acetylserine sulfhydrylase), Nad·kinase (NadK) are not exist in humans, they are a rational drug target against amebiasis.

Objective: This study aims to determine antiamoeba activities of various plant extracts.

Methods: Plants collected from Balikpapan Botanical Garden in East Kalimantan, extracted gradually using hexane, dichloromethane, and methanol as a solvent. Screening of these plant extracts was done using three enzymatic assay methods, SAT1/CS couple assay, CS single assay and Nadk/NO1 couple assay. For SAT1/CS and CS assay, extracts mixed enzymes was incubated at 37^{o}C for 10 minutes, added acetic acid and nynhidrin reagent, incubated 95^{o}C, and read absorbance at 560 nm. For Nadkinase/NO1 couple assay, extracts mixed enzyme added with NADH, incubated at room temperature for 10 minutes and read absorbance at 490 nm.

Results: Out of 114 plant extracts, there were 32 extracts, 13 extracts and 8 extracts showed inhibition >75% for SAT1/CS3 couple assay, CS single assay, and Nadk/NO1 couple assay, respectively. Two species plants showed inhibition >75% on SAT1/CS, CS, Nadk/NO1 enzymatic assay namely *Melicope glabra* and *Cratoxylum sumantranum.* According the reference, the chemical compounds contained in those plants are xanthone and benzophenone. Therefore, further research is still required to identify which compounds that take a role in antiamoeba activity. **Conclusion**: *M. glabra* and *C. sumatranum* potential as a candidate to be further examine as an antiamoeba drugs and will be continued for fractionation and purification yhe active compound.

Keywords: *plants extracts, antiamoeba, enzymatic assay, SAT1/CS, CS, Nadk/NO1, Melicope glabra, Cratoxylum sumantranum*

OP042

Tembelek Plant (*Lantana Camara*) as Potential Alternative Bioactive Natural Product againts *Streptococcus Pyogenes* In Indonesia

Ricky Indra Alfaray[1*•] and Rafiqy Sa'adiy Faizun[2•]

1. Faculty of Medicine Universitas Airlangga
St. Mayjen. Prof. Dr. Moestopo 47, Surabaya, Indonesia 60132
2. Faculty of Medicine Universitas Sriwijaya
St. Dr. Mohammad Ali Komplek RSMH Palembang Km. 3,5, Palembang, Indonesia 30126
• *equally contribution*

*Presenting author
rickyindraalfaray@gmail.com; +62 82233055595

ABSTRACT

Background: Infectious diseases are common problems in every country. Streptococcus pyogenes is the infectious agent that causes diseases such as pharyngitis, impetigo, toxic shock syndrome, and necrotizing fasciitis. Tembelek (*Lantana camara*) is a wild plant that can easily be founded in every ecosystem in Indonesia whether in nature or settlements and known as a plant that has an antibacterial effect but its potential against *Streptococcus pyogenes* remain unknown.

Objective: The aim of this study was to determine the potentiality of *Lantana camara* leaves and flowers extract against *Streptococcus pyogenes*.

Methods: An experimental study, in vitro using Post-test Only Control Group Designed, has been done and confirmed by the Indonesian Institute of Sciences. *Lantana camara* leaves and flowers extracts were obtained by maceration using ethanol. The extracts were diluted into eight concentrations and their antibacterial activity against *Streptococcus pyogenes* was tested using the Kirby-Bauer disc then proceeded Minimum Inhibitory Concentration (MIC) test and phytochemical assay. The data processed using SPSS software version 22.

Results: Flowers extract had the greatest inhibition zone (11.85 ± 0.119 mm) compared with the leaves extract (9.54 ± 0.07 mm) at the highest tested concentration was 640 mg/ml. The MIC of both extracts was 250 mg/ml. Flavonoids, phenolic, steroids, and saponins were found in both extracts whereas alkaloid was found only in flowers extract.

Conclusion: Depend on the bioactive natural products founded in both leaves and flower supported by antimicrobial potential examination result, we conclude that Tembelek has an antibacterial effect against *Streptococcus pyogenes*.

Keywords: *Antibacterial potential, Lantana camara, Streptococcus pyogenes, bioactive natural product.*

OP043

The Sensitivity Comparison of Extract of Tembelekan Leaf *(Lantana camara L.)* and Kopasanda Leaf *(Chromolaena odorata L.)* to *Staphylococcus aureus* Bacteria

Sri Anggarini Rasyid[1*], Sugireng[1], Sanatang[1], Rosdarni[1], Syawal Abdrrahman[1], Wa Ode Rejeki Natalia[1]

[1]*D-IV Medical Laboratorium Technology Study Program, Mandala Waluya Health Science College Kendari Southeast Sulawesi, Indonesia*

*Presenting Author
Email: anggarini.09@gmail.com, Phone: +6285218022999

ABSTRACT

Background: *Staphylococcus aureus* is a round-shaped Gram-positive bacterium that can cause infection in the human body. *Staphylococcus aureus* infection can be inhibited by the use of antibiotics. However, these bacteria experience resistance to some antibiotics. The purpose of this study is to see the sensitivity of Tembelekan (*Lantana camara L.*) and Kopasanda (*Chromolaena odorata L.*) leaf extract to *Staphylococcus aureus bacteria*.
Objective: This type of research is laboratory experimental research with the design of The Static Group Comparison Group.
Methods: The method used in this study is the disc method by testing the leaf of kopasanda (*Chromolaena odorata L.*) and tembekan (*Lantana camara L.*) in *staphylococcus aureus bacteria*.
Result: The results showed that the Sig 0.806> α (0.05) value, there is no significant difference in the sensitivity of Tembelekan leaf extract (*Lantana camara L.*) and Kopasanda leaf extract (*Chromolaena odorata L.*) to *Staphylococcus aureus* bacteria. However, based on the average value of the inhibition zone, Kopasanda leaf extract was higher than the inhibition zone of Tembelekan leaf extract.
Conclusion: This can be influenced by differences in components in the extract of tembelekan and kopasanda leave.

OP044

Alpha-Tocopherol Improves Sperm Quality by Regulate Intracellular Ca^{2+} Intensity (Influx/Efflux) of Bovine Sperm

Ratnani H [1*]. Suprayogi T.W. [2]. Sardjito T [2] .Susilowati S [2]

[1] *Infertility/Sterility Laboratory*
[2]*Artificial Insemination laboratory, Department of Reproduction and Gynaecology Faculty of Veterinary Medicine. Universitas Airlangga. Surabaya-Indonesia*

*Presenting Author
Email: ratnanihermin@yahoo.co.id, phone: +6281249155436

ABSTRACT

Objective: The research was conducted to evaluate the effect of suplementation α-Tocopherol into Tris-egg yolk Skim Milk extender on sperm quality by reducing Ca^{2+} influx on plasm membran.
Material and Methods : Semen samples were collected and suplemented with respectively 0 mM (P0); 0.5 mM (P1); 1 mM (P2); 1.5mM (P3) and 2 mM(P4) alpha tocopherol. then loaded into 0.25 ml straw and referigerated for 30 min. Before plunging into liquid nitrogren. the straw was placed above liquid nitrogen ($LN_{2)}$ surface for 5 minute. Post-thawing sperm was evaluated for motility. viability. abnormality. and plasma membrane integrity observed using Phase Contrase Microscope (200x) with eosin-negrosin staining. and intracellular Ca^{2+} intensity using Confocal Laser Scan Microscope (400x) with Fluo-3 Stainning.
Result: The results showed there was significant difference ($P \leq 0.05$) in sperm motility between P0; P1 and P2; P3. while two groups between ($P \geq 0.05$) P0; P1 with P2; P3; P4 has no significant difference; Sperm viability was shown a significant difference ($P \leq 0.05$) in P0; P1; P3 and P2. while two groups P1 with P3 has shown no significant difference ($P \geq 0.05$); There was significant difference ($P \leq 0.05$) in sperm abnormality of P0; P1 and P2; P3; P4. while there was no significant difference between P0; P1 with P2; P3; P4. The best result in sperm quality was supplementation with 1.5 mM and 2 mM α-Tocopherol. Ca^{2+} intracellular intensity : 142.76 ± 21.8au (arbritary unit) in Control Groups (P0) and 176.06±61.43 au at 1.5mM (P3) doses α-Tocopherol.
Conclusion: It was concluded that the supplementation 1.5mM and 2 mM α-Tocopherol in extender resulted beneficial effect on post-thawing sperm motility. viability. abnormality. plasma membrane integrity and intracellular Ca^{2+}intensity on Simmental bull cattle.

Keyword : *Freezing. Alpha Tocopherol. Sperm Qualiy. IntracellularCa^{2+}. Simmental*

SCHEDULE OF POSTER PRESENTERS

Room 300

No. Poster	Poster Title	Authors
PP001	Effect of Administering Okra Fruit (*Abelmoschus Esculentus*) Extract In Accelerating Wound Healing Through Increasing	Muhammad Luthfi
PP002	Screening Antiamoeba Activity Of Plants Collected From Alas Purwo, East Java Region	Defi Kartika Sari
PP003	Antimalarial Activity and Toxicity Evaluation of Ethyl Acetate Fraction Tablet (AS202-01) of *Andrographis paniculata*	Lidya Tumewu
PP004	Synergistic of Antiviral Activity against hepatitis C virus of *Ruta Angustifolia* Extract and Ribavirin.	Tutik Sri Wahyuni
PP005	Antibacterial Activity of Xylooligosaccharide Derivatives Against Gram-negative and Gram-positive Bacteria	One Asmarani
PP006	Antimalarial Activity of Multiple dose on *Plasmodium berghei* infected mice and Heme detoxification inhibitory activity of *Helianthus annuus* L leaf extract	Wiwied Ekasari
PP007	Evaluation of Phytochemical Properties of Purslane Extract (*Portulaca oleracea* L.) and Its Antibacterial Activity	Wahyu Choirur Rizky
PP008	Antimalarial Activities of Indonesian Plants in The East Java Region by PfMQO Assay	Hilkatul Ilmi
PP009	Antimalarial Activity of *Melicope triphylla* Leaves Extracts by Enzymatic and Miscoscopic Assay	Lia Ahyuni Mulya
PP010	In Vitro Antimalarial Activity of *Cratoxylum sumatranum* Stem Bark and Leaves Extracts against *Plasmodium falciparum*	Binti Ibtidaiyatus Sholichah
PP011	Anti-HIV Activity of Ethanol Extract from Gandarusa (*Justicia gendarussa Burm. f*) Leaves	Prihartini Widiyanti
PP012	Inhibition of Dengue Virus Sertotype 2 in Vero Cells with [Cu(2,4,5-triphenyl-1 H-Imidazole)2 (H2O)2].CI2	Teguh Hari Sucipto
PP013	Serotype Shift of Predominant Dengue Virus in Banjarmasin, Indonesia	Siti Churotin
PP014	Statistical Analysis of the Reemerging DENV3 in Association with Disease Manifestation	Ilham Harlan Amarullah
PP015	Current Trends and Challanges for Controlling Dengue in Indonesia	Faradila Khoirun Nisa Hakim
PP016	The spatial analysis of extrapulmonary tuberculosis spreading and its interactions with pulmonary tuberculosis in Samarinda, East Kalimantan, Indonesia	Nataniel Tandirogang
PP017	Detection of *Mycobacterium tuberculosis* using PCR test with the target GyrB gene in the blood specimens of patients in Surabaya East Java	Agnes Dwi Sis Perwitasari
PP018	Analysis Mutations of Amino Acid Isolated Newcastle Disease Virus (NDV) Form Swan Goose (Anser cygnoides)	Naimah Putri
PP019	Analysis of *Lymphocyte T* ($CD4^+$) Cells Expression in Severe Early Childhood and Free Caries	Muhammad Luthfi
PP020	Zoonotic and Other Gastrointestinal Parasites in Cats in Lumajang, East Java, Indonesia	Lucia Tri Suwanti
PP021	Infection *Toxoplasma Gondii* in Chicken as an Environment Contamination Indicator	Heni Puspitasari
PP022	Leptospirosis Sentinel Surveillance in Serang District and Tangerang District, Banten Province in 2017-2018	Intan Pandu Pertiwi
PP023	Pneumonia Risk Factor in Kubu Raya District, West Kalimantan Province 2017	Subhan, Subhan

PP024	Detection of MecA Gene Isolate Intensive Care Unit (ICU) of Regional General Hospital (RSUD) of Kendari	Zida Maulina Aini
PP025	A Case of Deep Vein Thrombosis Associated with Methicillin Sensitive *Staphylococcal aureus* Genu Septic Arthritis	Lyndia Effendy
PP026	Chronic Osteomyelitis and Microorganism Mapping at Soebandi General Hospital on January 2015 – June 2019	I Nyoman Semita
PP027	An Adult Patient With Suspected of Monkeypox Infection Differential Diagnosed To Chickenpox	Junis Tumewu
PP028	Prevalence of GPB-Associated UTI at Dr. Soetomo General Academic Hospital According to CDC Guideline 2019	Pristiawan Navy Endraputra
PP029	Prevalence of ompw Gene of Potentially Human Pathogenic Vibrio cholera from Shrimp in Surabaya, Sidoarjo, and Gresik	Radita Yuniar Arizandy
PP030	Prevalences, distribution and antibiotic sensitivity profile of Burkholderia cepacia complex isolated from Blood, Urine and Sputum spesimen in General Hospital Dr. Soetomo Surabaya	Tiar sondang uli Sihotang
PP031	Susceptibility Pattern of Klebsiella oxytoca isolated from Blood, Urine, Pus, and Sputum	Erizka Rivani
PP032	Hemorrhagic Cystitis With Vesicovaginal Fistula Complicated With Mild Right And Left Hydronephrosis And Anemia	Johannes Kristianto Hamonangan Marpaung
PP033	Profile of Gram Negative Pathogen and Antibiotic Suseptibility Test on Sputum Based on Colony Count	Metta Octora
PP034	Phenotypic Analysis of *Pseudomonas aeruginosa* Isolated from *Iatrogenic Endophtalmitis*	Merry Puspita
PP035	Antibiotic susceptibility pattern of *Serratia marcescens* Isolated from blood,urine,pus,and sputum specimens in general hospital Dr Soetomo surabaya	Andy Setiawan
PP036	Comparison of Resistance Profile of *Salmonella Typhi* from Blood Culture between Dr. Soetomo Hospital, Surabaya and Atma Jaya Microbiology Laboratory, Jakarta	Daniel Edbert
PP037	Molecular Detection of a New Patotype Enteroaggregative Haemorrhagic *Escherichia coli* (EAHEC) in Pediatric Diarrhea, 2015	Wahyu Setyarini
PP038	Hyperbaric Hyperoxia Exposure in Suppressing HIV Viral Replication: An experimental in-vitro in PBMC culture	Siti Qamariyah Khairunisa
PP039	Impact of HIV-1 Mutation Related To Resistance Of Antiretrovirus Therapy On Clinical Outcome of HIV / AIDS Patients	Brian Eka Rachman
PP040	Increased Hsp-72 Expression in Oral Mucormycosis after treatment with Hyperbaric Oxygen	Titut Harnanik
PP041	The Forming of Bacteria biofilm from *S. mutans* and *Aggr. actinomycetemcomitans* as a marker for Early Detection in Dental Caries and Periodontitis	Indah Listiana Kriswandini
PP042	Practices of complementary feeding for stunting children under the age of two years	Inne Soesanti
PP043	Field Evaluation of Simple Build Trap for Monitoring Potential Vector Against Mosquito Borne Diseases in Indonesia	Etik Ainun Rohmah

PP001

Effect of Administering Okra FRUIT (*Abelmoschus esculentus*) Extract in Accelerating Wound Healing through Increasing Fibroblast Cell Expression

Muhammad Luthfi[1]*, Wisnu Setyari Juliastuti[2], Elvina Hasna Wijayanti[3], Aisyah Ekasari Rachmawati[4], Nidya Pramesti Olifia Asyhari[5], Yuniar Aliyah Risky[6]

[1,2]*Department of Oral Biology, Faculty of Dental Medicine, Airlangga University, Surabaya, Indonesia.*
[3,4,5,6]*Undergraduate Student, Faculty of Dental Medicine, Airlangga University, Surabaya, Indonesia.*

*Presenting Author
Email: m.luthfi@fkg.unair.ac.id, Phone: +6281357898957

ABSTRACT

Background: Tooth extraction is a dental procedure for removing teeth from the alveolar bone socket. The tooth extraction process causes damage to hard tissue and soft tissue, so the body will respond physiologically to wound healing. The process of wound healing after tooth extraction is a complex and dynamic process that aims to restore the network conditions as before. This process involves epithelial regeneration and the formation of connective tissue. The wound healing process is divided into several phases, one of which is the proliferation phase of fibroblasts which is one of the important phases in the process of wound healing. Okra fruit contains saponins, tannins, flavonoids and alkaloids that have anti-inflammatory, antibacterial, antioxidant effects, and can stimulate angiogenesis so that it can accelerate the process of wound healing.
Objective: To determine that giving okra fruit extract (*Abelmoschus esculentus*) can increase fibroblast expression in wounds after extraction of wistar rat teeth.
Methods: 18 wistar rats were divided into 2 groups; control group and treatment group. 30% okra fruit extract was given to the treatment group. The number of fibroblasts was calculated statistically using One Way ANOVA and Tukey HSD.
Results: There was a significant difference in group of day 3 compared to groups of day 5 and day 7, but there was no significant difference in group of day 5 compared to group of day 7.
Conclusion: 30% okra fruit extract gel can increase fibroblast expression in wound healing process after extraction of wistar rat teeth.

Keywords: *Tooth extraction, wound healing, fibroblasts, okra fruit.*

PP002

Screening Antiamoeba Activity of Plants Collected From Alas Purwo, East Java Region

Defi Kartika Sari[1*], Myrna Adianti[1,2], Aty Widyawaruyanti[1,3] and Achmad Fuad Hafid[1,3]

[1]*Natural Product Medicine Research and Development, Institute of Tropical Disease, Universitas Airlangga, Surabaya 60115;* [2]*Vaculty of Vocational Study, Universitas Airlangga, Surabaya 60268;* [3]*Department of Pharmacognosy and Phytochemistry, Faculty of Pharmacy, Universitas Airlangga, Surabaya 60115*

*Presenting author
Email: defikartika.30.dks@gmail.com, Phone: +6285746310447

ABSTRACT

Background: *Entamoeba histolytica* infection occurs each year and amebiasis ranks third worldwide in lethal infection. The incidence of amoebiasis is higher in developing countries. Drug of choice for amebiasis is metronidazole which have unpleasant side effect such as a metallic taste, headache, dry mouth, urticaria, pruritus, and dark-colored urine. Therefore, the development of alternative antimebiasis agent is become essential. Indonesia has a great values for biodiversity which could be the source of drugs development waiting to be explore.

Objective: This study aims to determine the antiamoeba activity of several plants extracts against *Entamoeba histolytica*.

Methods: Ten species of plants which belongs to seven families were explored from Alas Purwo National Park, Banyuwangi, East Java, Indonesia. Each species was collected for its leaves and stem parts. They were further extracted using ethanol as a solvent and tested for their antiamoeba activity by cell culture system and NADK/NO1 enzymatic assay.

Results: Out of 20 extracts, there were three extracts inhibited *E.histolytica* cells > 60% at a concentration of 1 000 µg/ml namely *Garuga floribunda* leaves extract, *Alectyon serratus* leaves and stem extract. Meanwhile, for enzymatic assay there were two extracts revealed active with IC_{50} value of 64.8 µg/ml and 71.2 µg/ml for *Lepisanthes rubiginosum* leaves and stem extract, respectively.

Conclusion: *Garuga floribunda, Alectyon serratus,* and *Lepisanthes rubiginosum* were revealed as antiamoeba substance and potential to be explored further for their active compounds.

Keywords: *Entamoeba histolytica, NADK/NO1, Garuga floribunda, Alectyon serratus, Lepisanthes rubiginosum*

PP003

Antimalarial Activity and Toxicity Evaluation of Ethyl Acetate Fraction Tablet (AS202-01) of *Andrographis paniculata*

Lidya Tumewu[1*], Hilkatul Ilmi[1], Dwi Ayu Fitrianingtyas[2], Liya Suci Lestari[2], Indah Setyawati Tantular[1,3], Achmad Fuad Hafid[1,4], and Aty Widyawaruyanti[1,4]

[1]Natural Product Medicine Research and Development, Institute of Tropical Disease, Universitas Airlangga, Surabaya 60115, Indonesia; [2]Under graduate Student of Faculty of Pharmacy, Universitas Airlangga, Surabaya 60115, Indonesia; [3]Department of Parasitology, Faculty of Medicine, Universitas Airlangga, Surabaya, 60132, Indonesia; [4]Department of Pharmacognosy and Phytochemistry, Faculty of Pharmacy, Universitas Airlangga, Surabaya 60115, Indonesia.

*Presenting author
Email: lidyatumewu@yahoo.com, Phone: +62 81553297834

ABSTRACT

Background: Ethyl acetate fraction of *Andrographis paniculata* from 70% ethanolic extract namely AS202-01 was active as an antimalarial on *Plasmodium berghei* infected mice with Effective Dose 50% (ED_{50}) value of 6.75 mg/kg BW and classified as a highly active antimalarial substance. It was further developed as a tablet dosage form which had to fullfil the efficacy, safety and quality requirements. Therefore, AS202-01 tablet need to be evaluated for its efficacy as antimalarial drug and its toxicity on healthy rats.

Objective: This study aims to evaluate antimalarial activity and toxicity of AS202-01 tablet.

Methods: Antimalarial activity was conducted based on Peter's four days suppressive test. *Plasmodium berghei* infected mice were given AS202-01 tablet at a dose equal to andrographolide of 6.25, 12.5, 25 and 50 mg/kg body weight, twice a day for four days. The parasite's growth and survival rate were observed. Acute and subchronic toxicity evaluation was done in healthy Wistar rats by oral administration. Rats were given single dose of AS202-01 tablet of 5, 50, 200 and 2,000 mg/kg body weight to determine acute toxicity. Toxicity and mortality sign were observed within 24 hours and continued daily for 14 days. Meanwhile, subchronic toxicity was conducted using rats given AS202-01 tablet at a dose of 50, 327 and 1,000 mg/kg body weight for 28 days. The level of Aspartate Aminotransferase (AST), Alanine Aminotransferase (ALT), Gamma-Glutamyl Transferase (GGT), Blood Urea Nitrogen (BUN) and creatinine were determined.

Results: AS202-01 tablet exhibited antimalarial activity against *Plasmodium berghei* with ED_{50} value of 9.20 mg/kg body weight. It was significantly able to increase survival time of infected mice compared to untreated group. Rats administered orally at a dose of 2,000 mg/kg body weight as a single dose not showed any sign of toxicity or mortality during 14 days observation. AS202-01 tablet had Lethal Dose 50% (LD_{50}) value of 2,000 mg/kg body weight. Subchronic toxicity results showed that AST, ALT, GGT, BUN and creatinine levels were within normal range. Therefore, AS202-01 tablet was not affected the liver and kidney function.

Conclusion: The results showed that AS202-01 tablet classified as a highly active antimalarial substance eventhough the activity lower than the fraction. Therefore, formulation study need to be continued to increase the activity. Based on toxicity, AS202-01 tablet classified as a safe substance.

Keywords: *Andrographis paniculata, AS202-0 tablet, Plasmodium berghei, activity, toxicity.*

PP004

Synergistic antiviral activity of *Ruta angustifolia* extract and ribavirin against hepatitis C virus

Tutik Sri Wahyuni[1,2*], Humairoh Mahfud[1], Adita permatasari[2], Aty Widyawaruyanti[1,2], Achamad Fuad[1,2].

[1]*Department of Pharmacognocy and Phytochemistry, Faculty of Pharmacy, Airlangga University, Surabaya 60115, Indonesia.*
[2]*Institute of Tropical Disease, Airlangga University, Surabaya, 60115, Indonesia.*

*Presenting author
Email: tutik-s-w@ff.unair.ac.id

ABSTRACT

Background: Hepatitis C virus (HCV) infection is a global health problem worldwide that is estimated to infect around 170 million people worldwide. There is no vaccine available for preventing HCV infection. Therapy for the latest hepatitis C virus infection and is currently being developed is a group of Direct Acting Antivirals (DAAs) combined with interferon-α. However, the combination therapy still has deficiencies. Medicinal plants are promising sources for antivirals against HCV. A variety of plants have been tested and proven to be beneficial as antiviral drug candidates against HCV.

Objective: In this study, we examined anti-HCV activities of combination among extracts of *Ruta angustifolia* leaves and ribavirin and further examine the synergistic effect of combination.

Methods: The analysis was performed by *in vitro culture cells* by inoculating the material to Huh7it cells and hepatitis C virus JFH1a. Then the percent inhibition was calculated to determine the IC_{50} value. The combination test of *R. angustifolia* extract with ribavirin was carried out based on the Chou-Talalay method. The synergistic effect is determined through Compusyn software.

Results: The result was showed that *R. angustifolia* extract increased the potency of ribavirin for about 3.7 times higher. It was demonstrated that the IC_{50} of ribavirin decreased from 10.43 ± 0.18 µg/ml (single) to 2.80 ± 0.03 µg/ml (in combination). The CI value at ED_{50} = 0.691 (<1) which demonstrated that the combination of extract *R. angustifolia* and ribavirin possess a synergistic effect.

Conclusion: Combination treatment of *R. angustifolia* extract and ribavirin enhance the antiviral activity and gave synergistic effect. The result suggests that drug combinations that include *R. angustifolia* extract should be considered when developing alternative and complementary medicines as anti-HCV agents.

Keywords: *Ruta angustifolia , ribavirin, combination treatment, synergistic effect.*

PP005

Antibacterial Activity of Xylooligosaccharide Derivatives against Gram-negative and Gram-positive Bacteria

One Asmarani[1,2*], Lailatul Fithri[1,2], Petrus Eko Sugiharto[3], Eddy Bagus Wasito[3], Ni Nyoman Tri Puspaningsih[1,4,5]

[1]Proteomic Laboratory, Research Center for Bio-Molecule Engineering, Universitas Airlangga, Surabaya 60115; [2]Institute of Tropical Disease, Universitas Airlangga, Surabaya 60115; [3]Department of Microbiology, Faculty of Medicine, Universitas Airlangga, Surabaya 60115; [4]Department of Chemistry, Faculty of Science and Technology, Universitas Airlangga, Surabaya 60115; [5]Department of Bioinformatic and Medical Engineering, Asia University, Taiwan

*Presenting author
Email: oneasmarani.unair@gmail.com, Phone: +6285655277651

ABSTRACT

Background: Xylooligosaccharides are hemicellulose-xylan hydrolysis products using the xylanase enzyme. Xylooligosaccharides have potential as anti-antimicrobial / anti-bacterial properties. Anti-bacterial testing is useful in medicine field for disease prevention.

Objective: To determine in vitro effects of the antibacterial activity of xylooligosaccharides from various materials hydrolyzed with xylanase enzymes, namely: hemicellulose A extract, hemicellulose B extract, corncob extract and xylooligosaccharide fermentation extract by *Lactobacillus casei* for 18 hours.

Methods: Anti-bacterial test of xylooligosaccharides in various concentration (0-75%) against gram-negative bacteria (*Pseudomonas aeruginosa*) and gram-positive bacteria (*Staphylococcus aureus*) determined by *Minimum Inhibitory Concentration* (MIC) and *Minimum Bactericidal Concentration* (MBC) with one way analysis of variance (ANOVA) in 5% reliability level ($\alpha = 0.05$) and *Least Sigificant Different* (LSD).

Results: The xylooligosaccharide from hemicellulose A extract at concentration of 50% showed optimal inhibition of gram-positive bacteria and 25% of gram-negative bacteria. Xylooligosaccharide from hemicellulose B extract, corncob extract and yield of *Lactobacillus casei* fermetation for 18 hours at concentration of 25% showed optimal inhibition for both types of bacterias. The LSD result showed that the highest interaction effect was seen in the addition 75% concentration of xylooligosaccharide from various materials to Luria Bertani broth medium in 24 hours incubation time.

Conclusion: The various concentration of xylooligosaccharide from various materials provided inhibition effect againts gram-negative bacteria and gram-positive bacteria.

Keywords: *xylooligosaccharide, antibacterial activity, gram-negative bacteria, gram-positive bacteria*

PP006

Antimalarial Activity of Multiple dose on *Plasmodium berghei* infected mice and Heme detoxification inhibitory activity of *Helianthus annuus* L leaf extract

Wiwied Ekasari[1*], Heny Arwaty[2], Mulja Hadi Santosa[1], Amanda Riesta Kusuma Putri[1], Cindy Alicia Winata[1], and Nindya Tresiana Putri[1]

[1]*Department of Pharmacognosy and Phytochemical, Faculty of Pharmacy, Universitas Airlangga, Surabaya 60115;* [2]*Department of Medical Parasitology, Faculty of Medicine, Universitas Airlangga, Surabaya 60115*

*Presenting author
Email: wiwied-e@ff.unair.ac.id, Phone: +62315933150

ABSTRACT

Background: *Helianthus annuus* L. (sunflower) is a traditional plant that empirically used as an antimalarial drug. Crude extracts of the plant leaves were found to be active against *P. falciparum* in vitro.
Objective: In vivo antimalarial activity against *P. berghei* in mice and heme detoxification inhibitory activity of 80% ethanol extract of *H. annuus* leaves were investigated.
Methods: In vivo antimalarial activity was carried out using the Peters' 4-day suppressive test against *P. berghei* in Balb/c mice. Animals treated orally with 0.1, 1, 10, and 100 mg/kg of 80% ethanol extracts, respectively, twice daily for 4 days. Dihydroartemisinin-piperaquine (DHA-P) used as positive controls. Heme detoxification inhibitory activity was carried out using the method of Basilico *et. al.* (1998) which has been modified and absorbance was read by ELISA reader at a wavelength of 405 nm. Chloroquine used as positive controls.
Results: The results showed that inhibition of in vivo antimalarial activity against *P. berghei* in mice would increase along with the increasing doses. Then, the inhibition percentage was analyzed by probit analysis to find out the value of ED_{50}. In repeated dosing, ED_{50} was found to be 1.489 mg/kg. Heme detoxification inhibitory activity results showed that IC_{50} values for 80% ethanol extract and positive control were 0.690 and 0.688 mg/ml, respectively. There was no statistically significant difference between 80% ethanol extract and positive control ($p>0.05$).
Conclusion: The results showed that 80% ethanol extract of *H. annuus* leaf that administered twice per day had a strong activity both as an antimalarial in vivo and heme detoxification inhibitory

Keywords: *Helianthus annuus, antimalarial activity, P. berghei, heme detoxification inhibitory activity*

PP007

Evaluation of Phytochemical Properties of Purslane Extract (*Portulaca oleracea* L.) and Its Antibacterial Activity

Wahyu Choirur Rizky[1*] and Rahma Nusandari [2]

[1]*Department of Medicine and Surgery, Sulaiman Al Rajhi Medical School, Al Bukayriyah 52736, Qasseem Region, Kingdom of Saudi Arabia.*
[2]*Sub-department of Applied Food Microbiology Laboratory, Department of Food Science and Technology, University of Pembangunan Nasional Veteran East Java, Surabaya 60294, Indonesia.*

*Presenting author
Email: wchoirur@gmail.com, Phone: +62 823-3306-8839/ Whatsapp: +966 550309561

ABSTRACT

Background: Purslane (*Portulaca oleracea* L.) is one of the weeds which grows wildly and it is well-known to have medicinal importance. Purslane contains some bioactive compounds which include high content of omega-3 fatty acids, flavonoids, alkaloids, tannins, and saponins. Traditionally, Purslane is utilized as an alternative medicine to treat skin diseases and diarrhoea.
Objectives: The objective of this research was to evaluate the bioactive compounds of Purslane and its antibacterial activity.
Methods: Evaluation of antibacterial activity was applied on *Salmonella typhimurium, Eschericia coli*, and *Staphylococcus aureus*. This experimental research was divided into three steps. The first step was Purslane extraction. The second step was phytochemical compound analysis, including alkaloid, saponin, tannin, phenol, and flavonoid. The third step was antibacterial activity evaluation by paper discs diffusion method. The obtained data were tabulated and analysed descriptively. Purslane extracts were obtained by multilevel maceration process with water, ethanol, and hexane as the solvent in ratio 1:10 (w/v). Bacterial culture was inoculated in nutrient broth and incubated for 24h, then it was transferred to nutrient agar by swapping technique. Sterilized paper discs were soaked in each purslane extract with level of concentration 80%, 90%, 100%, and amoxicillin 500 mg as control, then placed to nutrient agar media. After incubation, inhibition zones were measured using calliper for determination of their diameter in centimetres.
Results: Results shown that water extract had a reddish-brown colour with bioactive compound of flavonoid 6.36%, phenol 1.94%, tannin 2.17%, saponin 24.83%, and alkaloid 31.53%. Ethanol extract had a black greenish colour consisted of flavonoid 5.97%, phenol 2.14%, tannin 3.93%, saponin 36.03%, and alkaloid 42.6%, whereas hexane extract had yellowish colour with undetectable compounds. The highest antibacterial activity was shown by ethanol extract at 100% concentration against *Salmonella typhimurium, Staphylococcus aureus*, and *Eschericia coli* with inhibition zone 2.74, 2.3, and 1.69 cm respectively.
Conclusion: All three types of Purslane extract (extracted with ethanol, water, and hexane) exerted an anti-microbial activity which showed by formation of inhibition zone around the discs. The highest inhibition zone diameter was showed in ethanol extract.

Keywords: *Purslane, extract, phytochemical, antibacterial, inhibition zone*

PP008

Antimalarial Activities of Indonesian Plants in The East Java Region By PFMQO Assay

Hilkatul Ilmi[1*], Lidya Tumewu[1, 2], Aty Widyawaruyanti[1,2], Achmad Fuad Hafid[1,2]

[1]*Natural Product Medicine Research and Development, Institute of Tropical Disease, Universitas Airlangga, Surabaya 60115*
Department of Pharmacognosy and Phytochemistry, Faculty of Pharmacy, Universitas Airlangga, Surabaya 60115

*Presenting author
Email: tatun31@gmail.com, Phone: +6281907778586

ABSTRACT

Background: Nearly half of the world's population is at risk of contracting malaria but increasing resistance to existing drugs means that new alternative drug are needed. *Plasmodium falciparum*-Malate quinone oxidoreductase (PfMQO) is essential enzyme that play a role in the electron transport chain (ETC) on the mitochondria Plasmodium. PfMQO is a potential drug target to be developed. Search for antimalarial drugs with new targets can be obtained from natural products including medicinal plants. Medicinal plants can be a source of potential medicine because its easy to grow (low cost production), potentially low toxic (safe for use), and has many chemical substance.
Objective: This study, we evaluated Indonesian plants for their anti-malarial activites by *Plasmodium falciparum*-Malate quinone oxidoreductase (PfMQO) assay.
Methods: Ethanol extracts of 21 samples derived from 15 species of medicinal plants collected in the Cangar forest, East Java Region were tested. Screening of antimalarial activities were determined by PfMQO assay at a concentration of 50 µg/ml. The IC_{50} values of active antimalarial extracts were determined using PfMQO assay.
Results: Nine extracts of the 21 extracts showed inhibition >50% againts PfMQO at a concentration of 50 µg/ml. The best inhibitory concentration (IC_{50}) was observed in *Eucaliptus globulus* stem (P5S) with the IC_{50} of 6.69 µg/ml. The IC_{50} value of the other extracts were *Myrsine affine* stem and folium (C10S and C10F) with IC_{50} value of 13.08 µg/ml and 19.89 µg/ml, respectively. *Randia maculate* folium, stem, and flower (C8F, C8S, and C8FL) with IC_{50} value of 20.93 µg/ml, 25.75 µg/ml, and 14.97 µg/ml, respectively. *Acacia decurens* stem bark and stem (C7SB and C7S) with IC_{50} value of 15.29 and 27.46 µg/ml, respectively. *Toona sureni* stem bark (P6SB) with IC_{50} value of 25.45 µg/ml
Conclusion: *Eucalyptus globulus* stem (P5S) has highest inhibition among other extracts with the IC_{50} of 6.69 µg/ml. This is plant extract may be good candidates for the development of anti-malarial with new target in mitochondria parasite malaria.

Keywords: *Antimalarial, Indonesian plants, PfMQO assay*

PP009

Antimalarial Activity of *Melicope triphylla* Leaves Extracts by Enzymatic and Microscopic Assay

Lia Ahyuni Mulya[1*], Achmad Fuad Hafid [2,3], and Aty Widyawaruyanti[2,3]

[1]Undergraduate Student of Faculty of Pharmacy, Universitas Airlangga, Surabaya 60115; [2] Institute of Tropical Disease, Universitas Airlangga, Surabaya 60115; [3]Department of Pharmacognosy and Phytochemistry, Faculty of Pharmacy, Universitas Airlangga, Surabaya 60115

*Presenting author
Email: lia.ahyuni@yahoo.co.id, Phone: +6282335154327

ABSTRACT

Background: Malaria is one of the health problem caused by parasite *Plasmodium*. The spread of drug resistance and the limitation number of effective drugs for treatment indicated important to find a new antimalarial drugs with new target. *Melicope triphylla* commonly known as Ki Sampang was empirically used as Indonesian traditional medicine to treat fever. Previous study showed that compound from genus melicope have an antimalarial activity. Based on chemotaxonomy approach, *M. triphylla* has the potential to be explored for the search for new antimalarial drugs.

Objective: This study aims to find an active extract of *M. triphylla* by enzymatic (MQO and DHODH) and microscopic assay.

Methods: *Melicope triphylla* leaves is collected from Fakfak, Papua, Indonesia. The leaves powder were extracted by gradually using n-hexane, dichloromethane and methanol by ultrasonic assisted method. Alkaloid rich-extract with acid-base extraction procces from simplicia (methanol extract). Those extracts were tested for their antimarial activity by enzymatic (MQO, and DHODH) and microscopic assay.

Results: The results of microscopic assay showed that all extract had antimalarial activity againt *Plasmodium falciparum*. n-hexane, dichloromethane, and methanol extracts were very active as antimalarial with the IC_{50} value 0.02 µg/ml, 0.08 µg/ml and 0.02 µg/ml, respectively. Alkaloid was active as antimalarial with the IC_{50} value 1.35 µg/ml. Antimalarial activity by MQO showed that n-hexane extract was the most potent extract (IC_{50}: 7.49 µg/ml). Meanwhile, antimalarial activity by DHODH method showed that methanol extract was the most potent extract (IC_{50}: 16.37 µg/ml), and the other extract had IC_{50} > 100 µg/ml.

Conclusion: n-hexane extract of *M. triphylla* leaves was classified as having a high activity of antimalarial substances, it might be a potential candidate for the new antimalarial drug.

Keywords: *Melicope triphylla*, antimalarial, microscopic, enzymatic assay

PP010

In Vitro Antimalarial Activity of *Cratoxylum sumatranum* Stem Bark and Leaves Extracts against *Plasmodium falciparum*

Binti Ibtida'iyatus Sholichah[1*], Achmad Fuad Hafid[2, 3], and Aty Widyawaruyanti[2,3]

[1]Undergraduated Student of Faculty of Pharmacy, Universitas Airlangga, Surabaya 60115; [2]Institute of Tropical Desease Universitas Airlangga, Surabaya 60115 [3]Department of Pharmacognosy and Phytochemistry, Faculty of Pharmacy, Universitas Airlangga, Surabaya 60115

*Presenting author
Email: binti.ibtidaiyatus.olichah-2015@ff.unair.ac.id, Phone: +62895366875295

ABSTRACT

Background: The rapid spread of antimalarial drug resistance becoming a problem in the treatment of malaria. Therefore, the search of new drugs with antimalarial activity is important. The natural substances from medicinal plants are potentially a good object to be studied. Cratoxylum is a small genus in the hypericaceae family. Previous study showed that genus of Crtoxylum contain xanthones and phenolic, both was reported for their antimalarial activity. Chemotaxonomy approach, we assumed that Cratoxylum sumatranum also contain xanthones and phenolic.
Objective: This study was to determine the antimalarial activities of *Cratoxylum sumatranum* stem bark and leaves extracts
Methods: *Cratoxylum sumatranum* stem bark (BP14-SB) and leaves (BP14-F) collected from Balikpapan Botanical Garden in East Kalimantan, were extracted gradually with n-hexane, dichloromethane and methanol by ultrasonic assisted method. All extracts were tested against *Plasmodium falciparum* 3D7 using microscopic method. Inhibition Concentration (IC_{50}) values of extracts detemined by probit analysis SPSS software.
Results: The results showed that all extracts inhibit *Plasmodium falciparum* growth. The strong inhibition was showed by methanol leaves extract (BP14-F-M) and dichloromethane stem bark extract (BP14-SB-D) with the IC_{50} value of 0.012 µg/ml and 0.016 µg/ml, respectively. The IC_{50} value of hexane leaves extract (BP14-F-H), DCM leaves extract (BP14-F-D), hexane stem bark extract (BP14-SB-H), methanol stem bark extract (BP14-SB-M) with IC_{50} value of 0.068 µg/ml, 0.025 µg/ml, 0.027 µg/ml, 0.227 µg/ml, respectively. TLC identification showed that BP14-SB-D contains flavonoids, terpenoids, polyphenols and anthraquinone. Whereas BP14-F-M, only contain anthraquinone.
Conclusion: *C. sumatranum* methanol leaves extract (BP14-F-M) and dichloromethane stem bark extract (BP14-SB-D) were exhibited antimalarial activity and potential to be developed as antimalarial drug substances.

Keywords: Antimalarial activity, *Plasmodium falciparum, Cratoxylum sumatranum*

PP011

Anti-HIV Activity of Ethanol Extract from Gandarusa (*Justicia gendarussa* Burm. f) Leaves

Ni Putu Ermi Hikmawanti[1], Prihartini Widiyanti[2,3,*], and Bambang Prajogo EW[4]

[1]*Department of Pharmacy, Faculty of Pharmacy and Science, Universitas Muhammadiyah Prof. DR. Hamka, Indonesia*
[2]*Faculty of Science and Technology, Universitas Airlangga, Indonesia*
[3]*Institute of Tropical Disease, Universitas Airlangga, Indonesia*
[4]*Department of Pharmacognosy and Phytochemistry, Faculty of Pharmacy, Universitas Airlangga, Indonesia*

*Presenting author :
Email: pwidiyanti@fst.unair.ac.id; phone 085850871975

ABSTRACT

Background : *Justicia gendarussa* Burm. f (Acanthaceae) is one of Indonesian medicinal plants.
Objective : The present study was designed to evaluate anti-HIV activity of 70% fractionated-ethanol extract (with releasing alkaloids) and 70% ethanol extract (without releasing alkaloids) of *J. gendarussa* leaves on in vitro HIV-infected of MOLT-4 cells.
Methods : The effect of the extracts in inhibiting viral replication and fusion process on acute HIV infection was identified and measured through syncytia formation assay. In addition, effect of the extracts on HIV p24 antigen was evaluated in a supernatant culture using HIV-1 p24 ELISA kit.
Results : It was found that 70% fractionated-ethanol extract and 70% ethanol extract of *J. gendarussa* leaves were significantly inhibited of HIV replication by inhibition of syncytia formation, where the 50% effective concentration (EC_{50}) values of the 70% fractionated-ethanol extract and 70% ethanol extract are 70.5 µg/ml and 228.7 µg/ml, respectively. Both of the extracts were also significantly inhibited HIV replication by decreasing HIV p24 antigen level where the 50% effective concentration values of the 70% fractionated-ethanol extract and 70% ethanol extract are 88.8 µg/ml and 540.7 µg/ml, respectively. Moreover, it was found that 70% fractionated-ethanol extract of *J. gendarussa* leaves has anti-HIV activity since its 50% effective concentration values less than 100 µg/ml.
Conclusion : It could be concluded that *J. gendarussa* is a useful resource that could be developed into a phyto-pharmaceutical product with in vitro anti-HIV activity.

Keywords: *Anti-HIV, Justicia gendarussa, MOLT-4 cell, p24 antigen, Syncytia formation.*

PP012

Inhibition of Dengue Virus Serotype 2 in Vero Cells with [Cu(2,4,5-triphenyl-1*H*-imidazole)$_2$(H_2O)$_2$].Cl_2

Teguh Hari Sucipto[1*], and Fahimah Martak[2]

[1]*Institute of Tropical Disease, Universitas Airlangga, Surabaya 60115;* [2]*Department of Chemistry, Faculty of Natural Science, Institut Teknologi Sepuluh Nopember, Surabaya 60111*

*Presenting author
Email: teguhharisucipto@staf.unair.ac.id, Phone: +628990484365

ABSTRACT

Background: Dengue fever and dengue hemorrhagic fever are transmitted to humans by the *Aedes aegypti* and *Aedes albopictus* mosquitoes, with an observed 30-fold increase in global incidence the last 50 years. Despite the tremendous efforts invested anti-DENV research, no clinically approved vaccine or antiviral chemotherapeutics are available for humans, and disease treatment is limited to supportive care. Over the years there has been a continuous interest in the chemistry of metal complexes with biological activity, including platinum complexes with antitumor activity and silver complexes with antimicrobial action.

Objective: Aim of the project was investigated of [Cu(2,4,5-triphenyl-1*H*-imidazole)$_2$(H_2O)$_2$].Cl_2 antiviral compound was further tested for inhibitory effect on the replication of DENV-2 in Vero cell.

Methods: DENV-2 were infected in Vero cells and replication of virus was measures by Viral ToxGlo with selectivity index value (SI) was determined as the ratio of cytotoxic concentration 50 (CC_{50}) to inhibitory concentration 50 (IC_{50}) for compound. The standard curve between concentration of compound (µg/ml) and %viability of cells was analyzed by linier correlation regression with regression equation. For infection rates, t-test was used to examine the statistical significances among the concentrations of compound. $P < 0.05$ was considered to be significant.

Results: The maximal inhibitory concentration (IC_{50}) of [Cu(2,4,5-triphenyl-1*H*-imidazole)$_2$(H_2O)$_2$].Cl_2 against DENV-2 was 6.98 µg/ml. The cytotoxic concentration (CC_{50}) of compound against Vero cells was 4.88 µg/ml. The SI values for [Cu(2,4,5-triphenyl-1*H*-imidazole)$_2$(H_2O)$_2$].Cl_2 0.7.

Conclusion: Based on selectivity index values, [Cu(2,4,5-triphenyl-1*H*-imidazole)$_2$(H_2O)$_2$].Cl_2 can inhibit the growth of DENV-2 and have high toxicity values for Vero cells.

Keywords: *DENV-2, Vero cells,* [Cu(2,4,5-triphenyl-1*H*-imidazole)$_2$(H_2O)$_2$].Cl_2, *Inhibition*

PP013

Serotype shift of Predominant Dengue virus in Banjarmasin, Indonesia

Siti Churrrotin[1*], Tomohiro Kotaki[1,3], Edi Hartoyo[2], Azma Rosida[2], Teguh H.S.[1], Ilham H.A.[1], Soegeng Soegijanto[1], Masanori Kameoka[3]

[1]*Indonesia-Japan Collaborative Research Center for Emerging and Re-emerging Infectious Diseases, Institute of Tropical Disease, Airlangga University, Indonesia.*
[2]*Faculty of Medicine, Lambung Mangkurat University, Banjarmasin, Indonesia.*
[3]*Department of Public Health, Kobe University Graduate School of Health Sciences, 7-10-2 Tomogaoka, Suma-ku, Kobe, Hyogo 654-0142, Japan.*

*Presenting author
Email: siti_churrotin@staf.unair.ac.id, Phone: +6281259873267

ABSTRACT

Background: Indonesia is the largest dengue endemic country in Southeast Asia. Particular Dengue virus (DENV) genotypes spreading throughout the region had their origin in Indonesia. Therefore, Indonesia is important place to investigate the evolution and migration of DENV. As a part of dengue research in Indonesia, we conducted surveillance in Banjarmasin, the capital of South Kalimantan province. Formerly, there is no epidemiological report of DENV in this city. We conducted three surveys in Banjarmasin during : (i) 2014 (ii) 2015 and (iii) September 2018 – February 2019. Among the non-structural proteins (NS) of DENV, NS5 is the largest viral protein that bears multiple enzymatic activities and play vital roles in virus replication. Thus, we focus on this region for the determination of serotype and detail analysis of mutation.
Objective: The aim of this study is to isolate DENV, amplify gene encoding NS5 region, analyze the nucleotide sequence and construct phylogenetic tree of DENV.
Methods: Virus isolation was achieved by cell culture using c6/36 and Vero cells. The presence of viral antigens were examined by immunostaining with flavivirus group cross-reactive Mab. Viral RNA was extracted from the infected cells and subjected to reverse transcriptase-polymerase chain reaction (RT-PCR) using specific primers. Directly sequencing was then carried out. Serotype determination and phylogenetic analysis were performed by Genetyx version 10 (Genetyx, Tokyo, Japan) and MEGA5.2 software respectively.
Results: A total of 26 isolates were obtained of 153 samples from dengue patients. We found the serotype shift of predominant DENV in Banjarmasin in our survey period. Namely, DENV type 4 was dominant in 2014 then replaced with DENV type 3 in 2015. While in 2018-2019, DENV type 2 became predominant.
Conclusion: According to statistics report by the ministry of health of the Republic of Indonesia, the total number of dengue cases in South Kalimantan increased about four times from 2014 to 2015. The raising of incidence and case fatality rate were also reported in the early 2019. The serotype shift might be associated with the increased number of total dengue cases in Banjarmasin. This indicates the need for continuous surveillance of circulating viruses to predict the risk of dengue infection.

Keywords: *Dengue virus, Banjarmasin, serotype, NS5, serotype shift*

PP014

Statistical Analysis of the Reemerging DENV3 in Association with Disease Manifestation

Ilham Harlan Amarullah[1*], Siti Churotin[1], Kris Cahyo Mulyatno[1] , Teguh Hari Sucipto[1], Etik Ainun Rohmah[1], Wardah[1], Zida Maulina Aini[1], Lilis Sulistya Nengrum[1], Soegeng Soegijanto[1],Puspa Wardhani[1,2], Aryati[1,2], Tomohiro Kotaki[3], Masanori Kameoka[3].

[1] *Institute of Tropical Disease, Universitas Arlangga, Surabaya 60115, Indonesia*
[2]*Clinical Pathology Department, School of Medicine, Universitas Airlangga, Surabaya 60286, Indonesia*
[3]*Center for Infectious Diseases, Kobe University Graduate School of Medicine, Hyogo Japan.*

*Presenting author
Email: ilham.harlan@gmail.com

ABSTRACT

Indonesia as dengue endemic country encounters dengue infection annually and several time outbreaks. Among all dengue virus serotypes, it was shown that DENV3 in Indonesia was frequently cause high risk and even life-threatening disease manifestation. Here we report our analysis of DENV3 isolates obtained from different cities including Aceh, Jogja, Kendari, and Probolinggo in 2015. Serum of patients who were clinically diagnosed with dengue infection were taken and cultured in C6/36 cell lines. After 3 blind passage culture's liquid were collected and used for RNA isolation. Reverse transcription PCR was conducted using isolated RNA as template followed by PCR serotyping. A total amount of 44 samples were confirmed as DENV3 positive which was further analyzed statistically using SPSS software. Our DENV3 isolates indicated that majority of patients were children (50%). The obtained data with regard to association between DENV3 and disease manifestation showed no significant difference. Nevertheless DHF 2 was found to be dominant clinical condition (50%) among patients. Secondary infection was found to be slightly higher than primary infection however there is no significant difference can be observed. Thus further analysis of whether severity triggered by DENV3 is caused by ADE or virulence needs to be conducted. The reemerging of DENV3 causing severe dengue infection especially to children is highly probable. Therefore continuation of monitoring as well as enhancing public awareness concerning dengue has to be done to avoid potential severe infection and outbreak.

Keywords: *Dengue, DENV3, DHF.*

PP015

Current Trends and Challanges for Controlling Dengue in Indonesia

Faradila Khoirun Nisa Hakim*

[1]*Student of Tropical Medicine Master Program, Faculty of Medicine, Universitas Airlangga, Surabaya 60132*

*Presenting author
Email: fara.faradilahakim@gmail.com, Phone: +6287865632699

ABSTRACT

Dengue is the most common cause of arboviral disease in human. *Aedes aegypti* mosquito is the main vector that transmits viruses of dengue infection. The incidence of dengue has grown dramatically in recent decades. Before 1970, there are only 9 countries reported had severe dengue epidemics and now the disease is endemic in more than 100 countries in the WHO regions.

In the South-East Asia, Indonesia is a hyperendemic country for dengue with an increasing number of cases in the last decade. Incidence rates was reported peaking approximately every 6-8 years. The last data showed more than 300 districts are reporting cases and more than 200 million people living in urban and rural areas are at risk with peak incidence shifting from young children to older age groups. The distribution of dengue disease is influenced by geography, rainfall, temperature, and rapid urbanization.

Surveillance is a critical component of any dengue prevention and control programs because it provides the information necessary for risk assessment and program guidance. A good management of the dengue needs simultaneously balanced approach involving various aspects like disease prevention, treatment, and the vector control.

This review highlights the current situation of dengue distribution, epidemiology, strategies for early dengue diagnostic, and strategies for controlling by following an effective implementation of vector control programs.

Keywords: *Dengue, incidence, prevention and control*

PP016

The spatial analysis of extrapulmonary tuberculosis spreading and its interactions with pulmonary tuberculosis in Samarinda, East Kalimantan, Indonesia

Nataniel Tandirogang[1*], Wirdah Ulfahaini Mappalotteng[2], Eko Nugroho[3], Yadi Yasir [1]

[1]*Laboratorium Mikrobiologi, Fakultas Kedokteran, Universitas Mulawarman, Samarinda;* [2]*Program Studi Pendidikan Dokter, Fakultas Kedokteran Universitas Mulawarman, Samarinda;* [3]*Laboratorium Patologi Anatomi, Fakultas Kedokteran, Universitas Mulawarman, Samarinda.*

*Presenting author
Email: nataniel@idikaltim.org, Phone: +6281346452727

ABSTRACT

Background: Extrapulmonary TB (EPTB) is an infectious disease which affects tissue outside the lungs. EPTB patients cannot be source of infection, therefore the findings in the community indicate that there are still active pulmonary TB patients as a source of infection. Understanding distributions of EPTB can be used as indicator to the unmonitored source of TB transmission in the community.
Objectives: The aim of this study is to analyze EPTB using spatial modeling based on location of patients.
Methods: This study is an observational research with spatial analysis approach using SatScan v.9.4.4 and ArcGis v.10.4. Involving 46 samples of EPTB patients in Anatomy Pathology Laboratory of RSUD Abdul Wahab Sjahranie in 2017 and 7 pulmonary TB patients who is around of EPTB patients. The distribution of EPTB patients is mostly located in areas with high population density.
Result: The results showed that the distribution pattern of TBEP patients was mostly in areas with high population densities Space time permutation model shows there are 3 clusters of EPTB with radius (2.91, 0.97, 1.13 km) centered on (-0.504177 S/117.092132 E, -0.476895 S /117.141700 E, -0.517031 S/117.092132 E).
Conclusion: The distribution of patients with EPTB and pulmonary TB indicates there is an interaction between EPTB and pulmonary TB in the cluster area. Bernoulli model shows that there is 1 cluster of EPTB and pulmonary TB with relative risk 5.29, radius of 3.19 km, and centered on -0.458159 S / 117.149945 E.

Keywords: *TBEP, TB Paru, spatial analysis.*.

PP017

Detection of Mycobacterium tuberculosis using PCR test with the target GyrB gene in the blood specimens of patients in Surabaya East Java

Agnes Dwi Sis Perwitasar[2], Ni Made Mertaniasih[1,2*]

[1]*Department of Clinical Microbiology, Faculty of Medicine UniversitasAirlangga, Jl. Prof. Dr. Moestopo No. 47 Surabaya 60131, Indonesia*
[2]*Laboratory of Tuberculosis, Institute of Tropical Disease Universitas Airlangga Kampus C Jl. Mulyorejo Unair Surabaya 60115,Indonesia*

*Presenting author
Email : nmademertaniasih@gmail.com, Phone: +6281330511063

ABSTRACT

Background: The problem of TB in Indonesia for now is very worrying. According to the WHO TB Global Report 2018, Indonesia ranks third. In this advanced and developing era we need to diagnose a disease quickly, so it is recommended to conduct a polymer chain reaction test (PCR) to detect the Mycobacterium tuberculosis bacteria using the target gyrB gene.
Objective: This study aims to detect the Mycobacterium tuberculosis bacteria by using the gyrB gene target in a patient's blood sample.
Methods: To obtain DNA from the bacteria Myobacterium tuberculosis, blood samples were extracted using KIT Qiagen . After obtaining the Mycobacterium Bacteria DNA, a Polymerase chain reaction (PCR) test was performed using a MINI BIORAD PCR machine for approximately 2 hours. After that we do electrophoresis and observation on UV geldoc.
Results: EDTA blood samples were collected from January 2018 - July 2019, with a total sample of 214. 48 (22,4%) detected positive for Mycobacterium tuberculosis, 165 (77,1%) negative for Mycobacterium tuberculosis.
Conclusion: PCR test of blood samples by using the gyrB gene target can be used to detect Mycobacterium tuberculosis bacteria. This is evidenced by the appearance of the band with a molecular weight of 1020bp.

Keywords: *PCR, Detection, Blood, Mycobacterium tuberculosis, gyrB.*

PP018

Analysis of Mutations of Amino Acid Isolated From *Newcastle Disease* Virus (NDV) From Swan Goose (*Anser Cygnoides*)

Naimah Putri[1*], Rahaju Ernawati[1], and Fedik Abdul Rantam[1,2]

[1]*Laboratory of Virology and Immunology, Department of Microbiology, Faculty of Veterinary Medicine, Universitas Airlangga, Surabaya 60115;*
[2]*Stem Cell Research and Development Center, Universitas Airlangga, Surabaya 60115*

*Presenting author
Email : naimah.putri-2018@fkh.unair.ac.id, Phone: +6282327027407

ABSTRACT

Background: NDV is a single stranded RNA virus. The NDV can cause clinical signs varying from subclinical infections to 100% mortality, depending on suspectibility of the host and the virulence of the virus. The virus is categorized into velogenic (velogenic neurotropic of velogenic viscerotropic), mesogenic,and lentogenic. Lentogenic strain is the most avirulent.
Objective: This study was conducted to analyze amino acid mutations of *Newcastle disease* Virus (NDV) from swan goose.
Methods: Samples were collected from cloaca swab of unvaccinated swan goose (*Anser cygnoides*) that suspected to be infected by NDV from several area in east Java. They were isolated by inoculation in Specific Pathogen Free embryonated eggs. Haemagglutination and Haemagglutination Inhibition tests were done to confirm that isolated virus was NDV. Suspected samples were processed to one step Reverse Transcriptase – Polymerase Chain Reaction using primer that amplified partial sequences of fusion (F) gene was analyzed to determine the pathotypes.
Resuts: Deduced amino acid sequence of the cleavage site of fusion (F) protein revealed that all isolates had avirulent motifs. Amino acid mutations that occurred were analyzed to the same reference sequence.
Conclusion: NDV isolated from swan goose (*Anser cygnoides*) have some amino acid mutations. The mutation in the virus cannot change the virulence of the virus.

Keywords: *Newcastle disease virus, amino acid, mutations, virulence.*

PP019

Analysis of *Lymphocyte T* ($CD4^+$) Cells Expression in Severe Early Childhood and Free Caries

Muhammad Luthfi[1*], Priyawan Rachmadi[2], Aqsa Sjuhada Oki[3], Retno Indrawati[4], Agung Sosiawan[5]

[1,3,4]*Department of Oral Biology, Faculty of Dental Medicine Universitas Airlangga, Surabaya 60115;*
[2]*Department of Dental Material, Faculty of Dental Medicine Universitas Airlangga, Surabaya 60115;*
[5]*Department of Public Health, Faculty of Dental Medicine Universitas Airlangga, Surabaya 60115;*

*Presenting Author
Email: m.luthfi@fkg.unair.ac.id, Phone: +6281357898957.

ABSTRACT

Background: Early childhood caries (ECC) is still one of the many diseases found in children throughout the world. Cariogenic bacteria are a significant risk factor for ECC associated with early colonization and high levels of cariogenic microbes (Streptococcus mutans (S. mutans). lymphocyte T ($CD4^+$) cells known as helper T cells, are effector cells for mediated host immunity naive T cells ($CD4^+$) must be activated to initiate effector function, this activation occurs through interaction with professional antigen-presenting cells (pro-APC), especially dendritic cells that lead to intracellular pathways that regulate T cell receptor (TCR) more specifically against antigen in T cells.
Material and method: Lymphocyte cells from
samples were collected from S-ECC and Free caries aged 5 to 6 years. The subjects were instructed to gargle 10 ml of sterile NaCl 1.5% solution for 30 seconds, and expectorate it into a sterile glass then analyzing T lymphocyte cell (CD4 +) expression using flow cytometry.
Results: lymphocyte T ($CD4^+$) cell expression at S-ECC (6.2525 ±, 64482) while in free caries (8.4138 ± 1.10397) with p-value (p = 0. 000).
Conclusion: of lymphocyte T ($CD4^+$) cells Expression at S-ECC is lower than that occurring in free caries

Key words: *Severe Early Childhood Caries, adaptive immunity, lymphocyte T ($CD4^+$) cells Expression*

PP020

Zoonotic and Other Gastrointestinal Parasites in Cats in Lumajang, East Java, Indonesia

Izzu Ar-Rifqi Rabbani[1], Fairuz Jihan Mareta[1], Kusnoto[2] , Poedji Hastutiek[2], Nunuk Dyah Retno Lastuti[1], Mufasirin[2,6], Suharsono[3], I Komang Wiarsa Sardjana[4], Moh. Sukmanadi[5], Lucia Tri Suwanti[2,6,*]

[1.] Student of Faculty of Veterinary Medicine, Universitas Airlangga, Jl. Mulyorejo, Kampus C Unair, Surabaya, 60115, Indonesia; [2.] Department of Veterinary Parasitology, Faculty of Veterinary Medicine, Universitas Airlangga, Jl. Mulyorejo, Kampus C Unair, Surabaya, 60115, Indonesia; [3.] Department of Veterinary Anatomy, Faculty of Veterinary Medicine, Universitas Airlangga,Jl. Mulyorejo, Kampus C Unair, Surabaya, 60115, Indonesia; [4.] Department of Veterinary Clinic, Faculty of Veterinary Medicine, Universitas Airlangga,Jl. Mulyorejo, Kampus C Unair, Surabaya, 60115, Indonesia; [5.] Department of Veterinary Basic Medicine, Faculty of Veterinary Medicine, Universitas Airlangga, Jl. Mulyorejo, Kampus C Unair, Surabaya, 60115, Indonesia; [6.] Institute of Tropical Disease, Universitas Airlangga,Jl. Mulyorejo, Kampus C Unair, Surabaya, 60115, Indonesia;

*Presenting author
Email: tswant@gmail.com, Phone: +6281226094872

ABSTRACT

Background: Studies on the prevalence of gastrointestinal parasites in cats are important in medicine and veterinary, because some of zoonotic parasites such *Toxocara* spp can infect cats and cats can be a source of transmission to humans.

Objective: To investigate the prevalence of gastrointestinal parasites in cats in Lumajang East Java Indonesia.

Methods: One hundred and twenty fecal samples were collected from owned and stray cats. Sampling was carried out from January to May 2018 with location at housing (owned cat) and market (stray cat) in Lumajang, East Java Indonesia . The samples were examined by direct smears, sedimentation and flotation techniques.

Results: The results showed that gastrointestinal parasites were found in 77 of the 120 (60.17%) examined samples, in detail, 46.67% (28/60) from owned cats and 81.67% (49/60) from stray cats. That parasites in both owned and stray cats, respectively, were *Toxocara* spp. (18.33% or 11/60 and 61.67% or 37/60), *Ancylostoma* sp. (11.67% or 7/60 and 25% or 15/60), *Diphylobothrium* sp. (5% or 3/60 and 1.67% or 1/60), *Dipylidium caninum* (3.33% or 2/60 and 0%), *Isospora* spp. (20% or 12/60 and 50% or 30/60) and *Eimeria* spp. (5% or 3/60 and 11.67% or 7/60)

Conclusion: The prevalence of zoonotic gastrointestinal parasites both in owned and stray cats were high, for this reason, it is necessary to plan a program to control this zoonotic parasites.

Keywords: *Gastrointestinal Parasites; Owned Cat; Stray Cat; Zoonoses; Indonesia*

PP021

Infection *Toxoplasma Gondii* in Chicken as an Environment Contamination Indicator

Heni Puspitasari[1*], Lucia T. Suwanti[1,2], Mufasirin[1,2], Andi Jayawardhana[3]

[1*] *Institute of Tropical Disease, Airlangga University, Surabaya*
[2*] *Parasitology Department, Veterinary Medicine, Airlangga University, Surabaya*
[3] *Health Science Faculty, Merdeka University, Surabaya*

*Presenting author
Email: henipuspitasari486@gmail.com, Phone: +6285230157672

ABSTRACT

Toxoplasmosis is an infection caused by intraceluller obligate parasite *Toxoplasma gondii* that cause severe illness in congenitally infection or when it is reactivated in immunosuppressed patient. *Toxoplasma gondii*, is a facultatively heteroxenous and have several potential routes of transmission. There are two main route transmission, transmitted vertically by tachyzoites that are passed to the foetus via the placenta and horizontal transmission of *T. gondii* that involve three life-cycle stages, i.e. ingesting infectious oocysts from the environment, tissue cysts or tachyzoites which are contained in animal meat Transmission may also occur via tachyzoites contained in blood donor, tissue transplants, or unpasteurized milk. The route that has an important role in epidemiology is from the consumption of raw or undercooked meat, but recent research shows that the prevalence of *T. gondii* is associated with environmental contamination by oocysts. The contamination of environment, and, hence, of intermediate wild hosts, is linked to the shedding of oocysts by felids, either stray or domestic cats close to farms or wild felid species. Evidence of infection. Soil is increasingly recognized as an important source in the transmission of *T. gondii*. Environmental conditions are important for oocyst survival. Moist conditions can increase oocyst survival, which likely accounts for the high prevalences in tropical countries. *T. gondii* in chickens in the farm with soil contamination was higher than that with no soil contamination. The soil contamination might be an effective indicator of *T. gondii* infection in chickens. *T. gondii* infection in chickens is an effective indicator of contamination of soil and water by oocysts because of the eating habits of chickens that scavenge on the ground and drink unprocessed water. This paper reviews the prevalence of *T. gondii* infection in chickens in several countries.

Keywords: *Toxoplasma gondii, Toxoplasmosis in chicken, oocyst transmission, soil, water*

PP022

Leptospirosis Sentinel Surveillance in Serang District and Tangerang District, Banten Province in 2017-2018

Intan Pandu Pertiwi[1*], Dwinda Ramadhoni[1, 2], and Endah Kusumowardani[3]

[1,2,3]*Surveillance Epidemiology Division, BBTKLPP Jakarta, Jakarta 13890;*

*Intan Pandu Pertiwi
Email: intan1902@gmail.com, Phone: +6281802419652

ABSTRACT

Background: Leptospirosis is a zoonotic disease which is mainly spread by rats that release bacteria through urine into the environment. Humans are infected through injured skin or mucous membranes. The mortality rate in Indonesia ranges from 2.5-50%.

Objective: To increase case finding and early detection of Leptospirosis cases in Serang District and Tangerang District, and to determine epidemiology description and its risk factors.

Methods: Sentinel approach was used to identify suspect, probable and confirmation of Leptospirosis cases, and to take specimens based on cases operational definitions from one hospital and two Primary Health Care (each District). Suspects are checked with RDT and PCR methods for confirmation.

Results: From samples which had taken in Serang District and Tangerang District (59 and 128 samples, respectively), most of respondents are came from Sub-District of Kramatwatu (25.4%) and Balaraja (17.6%). Most of respondents were male (54.2% and 60.2%) and housewives (37.3% and 22.2%). The risk factors are 39.0% and 56.5% of respondents drinking water from wells, 74.6% and 84.3% of them found rats in the house, 35.6% and 50.0% of them used to contact water puddle, 18.6% and 23.1% of them used to do activities in the river. Results of samples examinations were 18 and 73 samples positive of RDT, 5 and 1 samples positive of *Leptospira sp* confirmed by PCR, respectively for Serang District and Tangerang District.

Conclusion: It is found 18 and 73 probable cases, 5 and 1 confirmed cases of Leptospirosis, each in Serang District and Tangerang District.

Keywords: *Leptospirosis, sentinel, surveillance, Banten.*

PP023

Pneumonia Risk Factor in Kubu Raya District, West Kalimantan Province 2017

Subhan [1*] and Dwinda Ramadhoni[2]

[1] *Division of Surveilans Epidemiologi, BBTKLPP Jakara;*
[2] *Section Head of Assesment and Disemination, BBTKLPP Jakarta*

*Presenting author
Email: subhan0384@gmail.co, Phone: +6281381348135

ABSTRACT

Background: In 2015, pneumonia cases in toddlers in Indonesia amounted to 3.55%, while in West Kalimantan Province were 2.12%. In 2015 and 2016 the highest number of pneumonia cases in Kubu Raya District were in Sungai Raya Subdistrict, which were 94 cases and 93 cases.
Objective: This study was conducted to determine the dominant risk factors for the incidence of pneumonia in toddlers in Kubu Raya District.
Methods: This study was an analytical study with a case control design (1:1). Case samples were toddlers aged 7-59 months who were declared suffering from pneumonia by health workers in the last 2 weeks before the study was conducted based on the health center register data. The number of respondents was 120 toddlers.
Results:The results of multivariate analysis using logistic regression showed that variables that were significantly associated with the incidence of pneumonia were mother's knowledge, kitchen ventilation, PM 2.5 and family room's temperature.
Based on Population Attributable Risk (PAR%) the biggest is mother's knowledge, followed by family room's temperature, kitchen ventilation and PM 2.5
Conclusion: Determinants of risk factors for the incidence of pneumonia in toddlers in Kubu Raya District are PM 2.5, mother's knowledge, kitchen ventilation and family room's temperature. Prevention rate of the incidence of pneumonia in toddlres in the community can be achieved by mother's knowledge followed by improvements of house condition.

Keywords: *Pneumonia, toddlers, risk factors, case control*

PP024

Detection of *MecA* Gene Isolate Intensive Care Unit (ICU) of Regional General Hospital (RSUD) of Kendari

Zida Maulina Aini[1*], Yenti Purnamasari, Agussalim Ali[2], Tajriana Nurfadillah[3]

[1]*Department of Microbiology, Faculty of Medicine, Universitas Halu Oleo, Kendari 93232*

[2] *Department of Anesthesiology and Intensive Care Unit, Faculty of Medicine , Universitas Halu Oleo, Kendari 93232*

[3]*Faculty of Medicine, Universitas Halu Oleo, Kendari 93232*

*Presenting author

Email: zidamaulina@gmail.com, Phone: +628114059147

ABSTRACT

Background: Methicillin Resistant Staphylococcus Aureus (MRSA) is still an important health issue because its frequency tends to increase in the world so it can increase morbidity and mortality and especially at South East Sulawesi there is no data about prevalence of MRSA dissemination.The underlying factor of MRSA resistance is genetic element called Staphylococcus Cassette Chromosome mec (SCCmec). The MecA gene is the conserved part of the genetic element of SCCmec MRSA, encoding PBP (Penicillin Binding Protein) mutant or PBP2a. This study aims to detect the presence of MecA gene as part of the gene that marks the presence of MRSA bacteria at Intensive Care Unit (ICU) using Polymerase Chain Reaction (PCR) method. The MrcA gene is detected if there is flattening DNA chain with 533 bp at electrophoresis

Methods: This research used descriptive study design through observational laboratory method. Sampling was conducted at intensive Care Unit (ICU) of Regional General Hospital (RSUD) of Kendari and bacteria isolate tested at microbiology research laboratory and biomolecular laboratory of Medical Faculty of Halu Oleo University. There are 1 isolate collected from ICU and isolates sample were extracted and amplified with MecA gene is target.

Results: result of study shown that ICU sample have Mec A gene

Conclusion: MecA gene were detected at ICU room

Keywords: *MRSA, SCCmec, Gen Mec A, PCR*

PP025

A Case of Deep Vein Thrombosis Associated with Methicillin Sensitive *Staphylococcal aureus* Genu Septic Arthritis

Lyndia Effendy[*1], Metta Octora[2], Deby Kusumaningrum[3]

Department of Clinical Microbiology, Faculty of Medicine University of Airlangga, Dr. Soetomo Hospital Surabaya, Indonesia

Presenting author *
Email: lyndiaeffendy@gmail.com, Phone 08123019152

ABSTRACT

Backgrounds: *Staphylococcus aureus* infection is one of the cause of an acute and destructive septic arthritis in adults. The frequency of septic arthritis is four to ten cases per 100,000 patients years.
Objective: to describe increased risk of deep vein thrombosis in Methicicllin Sensitive *Staphylococcal* genu septic arthritis
Case Report: A 50-year-old man with hypertension was referred to the emergency department of Dr. Soetomo hospital with four days history of fluctuating fever and severe progressive pain of the left knee that had begun after three years recurring history of desquamated itchy redness of the entire body skin. He had been consuming herbal medication for this and recently undergoing 12 days hospitalization in Pamekasan hospital but no improvement was seen.
At presentation, the patient was not able to stand. BMI 23kg/m^2, blood pressure 170/100mmHg, pulse 105 beats per minute and body temperature 37,5^{0}C. The day before it was 38,2^{0}C. The left knee was painful with swollen and warm with redness and desquamation. X-ray studies of the left knee revealed osteoarthritis. Joint aspirate microscopy showed gram positive cocci and the culture was confirmed from Phoenix as *Methicillin susceptible Staphylococcus aureus* which still susceptible to clindamycin and this treatment was started. However, because of inadequate response, further investigation of the arthritis knee were performed and found partial thrombus of vena saphena magna femoralis to distal sinistra. The patient received anticoagulant agent and had a good clinical outcome.
Conclusions: This case provides evidence that deep vein thrombosis must be considered as a possible and devastating complication of Methicillin Sensitive *Staphlococcal* genu septic arthritis.

Keywords *Methicillin Sensitive Staphylococcus aureus, septic arthritis, erythroderma, deep vein thrombosis*

PP026

Chronic Osteomyelitis and Microorganism Mapping at Soebandi General Hospital on January 2015 – June 2019

I Nyoman Semita[1*], Ni Njoman Juliasih[2], Ni Made Mertaniasih[2,3]

[1]*Orthopaedic Department, Medical Faculty Jember University, Soebandi General Hospital Jember, Indonesia*
[2]*Club Study Tuberculosis, Institute of Tropical Disease, Universitas Airlangga, Surabaya 60115*
[3]*Departemnt of Clinical Microbiology, Faculty of Medicine, Universitas Airlangga*

*Corresponding author
Email: nyomansemita@yahoo.com Phone: +6281230871186

ABSTRACT

Background: There is limited data available on the spectrum of causative organisms, few studies have been performed in the developing world. Typically palliative treatment involves chronic suppressive antibiotic therapy. Knowledge of the microbiology of chronic osteomyelitis may guide the selection of empiric postoperative or palliative antibiotic therapy.
Aim: We report microorganism cause chronic osteomyelitis, antibiotic sensitivity, and microorganism mapping.
Methods: Retrospective reviewed a cohort of 186 consecutive patients who underwent surgical treatment of chronic osteomyelitis at our institution the five years period from January 2015 to June 2019. The method used for antibiotic sensitivity is disc diffusion technique with implementation standards based on WHO recommendation. The descriptive data analysis was performed cross tabulated data between types of microorganism of the antibiotics tested, presented in the form of antibiotic sensitivity percentages using color degradation (red:0-40%, yellow:41-79%, green:80-100%).
Results: Eschericia coli was the most commonly isolated Gram negative organism (32,26%), Kleibsella (18,28%), Pseudomonas (12,9%), Enterobacter (5,38%), Proteus (5,38%), B.Cepacia (5,38%), Serratia (4,3%), Acinetobacter (4,3%), Providentia s (4,3%), Aeromonas (3,23%), and Staphylococcus was the most commonly isolated gram positive organism (4,3%). Microorganism mapping on chronic osteomyelitis showed non-intensive room more common (79,03%) than intensive room (20,97%). Antibiotic sensitivity showed amikacin, pipercicilin tazobactam, cefoxitin, imipenem (80-100%) for gram negative. Linezolid, tetracyclin, vancomycin, and chloramphenicol showed (80-100%) sensitivity for gram positive.
Conclusion: Prognosis of chronic osteomyelitis depends on proper microbiological techniques that help in isolation, identification, and treatment of the bone-infecting, often multidrug resistant organism.

Keywords: *Chronic osteomyelitis, Antibiotic sensitivity, Microorganism mapping*

PP027

An Adult Patient With Suspected of Monkeypox Infection Differential Diagnosed to Chickenpox

Junis Tumewu[1,4*], Maya Wardiana[2*], Evy Ervianty[2], Mochamad Amin[3], Siti Rochmanah Oktaviani S[1], Kuntaman[1], Juniastuti[1,3], Maria I. Lusida[1,3o]

[1]*Department of Clinical Microbiology,* [2]*Department of Dermatology and Venereology, Faculty of Medicine, Universitas Airlangga - Dr. Soetomo General Academic Hospital, Surabaya;* [3]*Institute of Tropical Disease, Universitas Airlangga, Surabaya 60115, Indonesia;* [4]*Naval Medical Department, Indonesian National Armed Forces.*

Email : ingelusida@itd.unair.ac.id

*Same contribution

[o]Corresponding author

ABSTRACT

Background: Monkeypox is a zoonosis, which is a disease transmitted from animals such as monkeys and rodents through direct contact with blood, body fluids or skin lesions of infected animals, and contaminated wild animal flesh (bush meat). The disease has similar appearance to Chickenpox caused by Varicella-Zoster Virus (VZV). Recently, on May 9th 2019, there was one laboratory-confirmed case of Monkeypox reported in Singapore.

Case Report: On June 1st 2019 a-51-year-old-male patient was referred from a private hospital to Dr. Soetomo General Hospital, a tertiary referral hospital, with blisters almost all over his body that worsened in the last three days. There was fever and muscle sore one week ago followed by blister appearance. The patient has a contact history of feeding a monkey that belong to the patient's neighbour, but the owner of the monkey didn't have any symptoms and abnormalities.

General condition appeared sick. There were multiple polymorphic vesicles mainly on the facial, anterior et posterior thoracic and superior extremities with umbilication and crustation. Based on the clinical data, our proposed differential diagnoses were Monkeypox and Chickenpox. Hematology: Hb: 12.5 g/dl, leucocytes: 6,870/uL with neutrophils: 65.4%. Vesicle fluid was collected for PCR amplification with specific primers for Varicella-Zoster Virus (VZV). The result was positive and confirmed by the sequencing analysis that showed more than 98% homologue to several published VZVs from the GenBank.

Conclusion: We report a case suspected of Monkeypox with differential diagnosed to Chickenpox, but then it was confirmed as Chickenpox/VZ by molecular laboratory techniques.

Keywords: *Monkeypox, chickenpox, adult, Indonesia*

PP028

Prevalence of GPB-Associated UTI at Dr. Soetomo General Academic Hospital According to CDC Guideline 2019

Pristiawan Navy Endraputra[1*], Agung Dwi Wahyu Widodo[2]

[1] *Clinical Microbiology Resident at Department of Clinical Microbiology, Dr. Soetomo General Academic Hospital/Faculty of Medicine, Airlangga University*
[2] *Clinical Microbiologist at Department of Clinical Microbiology, Dr. Soetomo General Academic Hospital/Faculty of Medicine, Airlangga University*

*Presenting author
Email: pristiawan@me.com

ABSTRACT

Background: Hospitalized patients possessed great risk of urinary tract infection (UTI). There was no definitive threshold of colony count in UTI diagnosis. However, CDC defined bacterial count $\geq 10^5$ with no more than two colonies. Not only gram-negative, gram-positive bacteria was also important cause particularly in patient with hospitalization.
Objective: The aim of this study was to measure the prevalence of UTI caused by GPB according to CDC guideline on UTI 2019.
Methods: The data was collected from January to June 2019 for all urinary isolates with clinical symptoms of UTI at Department of Clinical Microbiology, Dr. Soetomo General Academic Hospital. The data was sorted by colony count and gram characteristic. CDC guideline on UTI 2019 was used to define UTI.
Results: The sum of GPB was 560 isolates (25%) from all specimens for aerobic culture, 388 isolates in group with colony count $<10^5$ CFU/ml (69%) and 172 isolates in $\geq 10^5$ CFU/ml group (31%). The most frequently isolated bacteria were *Enterococcus faecalis* (28%), *Staphylococcus epidermidis* (26%), and *Corynebacterium urealyticum* (18%) in $<10^5$ CFU/ml group while in $<10^5$ group were *Staphylococcus epidermidis* (53%), *Corynebacterium non urealyticum* (9%), and *Enterococcus faecalis* (7%).
Conclusion: As defined by CDC, the prevalence of UTI among all cases caused by GPB at Dr. Soetomo General Academic Hospital significantly decreased to 31%.

Keywords: *GPB, UTI, CDC Guideline, Colony Count*

PP029

Prevalence of *ompw* Gene of Potentially Human Pathogenic *Vibrio cholera* from Shrimp in Surabaya, Sidoarjo, and Gresik

Radita Yuniar Arizandy[1*], Dadik Raharjo[1], Wahyu Setyarini[1], Zakaria Pamoengkas[1], Toshiro Shirakawa[2]

[1] *Institute of Tropical Disease, Universitas Airlangga, Surabaya 60115, Indonesia ;* [2] *Kobe University Graduate School of Medicine, Kobe, 650-0017, Japan*

*Presenting author
Email: ditaarizandy@gmail.com, Phone: +6285648302923

ABSTRACT

Background: Food is not only a source of energy and nutrients to support human life but also a media for an element of human health nuisance. Indonesian people having indulgence in consuming seafood, poor hygiene in seafood leads to diarrheal disease, which one is a Cholera Diarrhea disease caused by *Vibrio cholera*. Cholera is a disease that caused by *Vibrio cholerae* which is one of pathogenic bacteria that can be gained from contaminating of fishery products.

Objective: This research aimed to know the prevalence of pathogenic *Vibrio cholerae* in shrimp based on *ompw* gene from shrimp sample in traditional market of Surabaya, Sidoarjo, and Gresik City

Methods: Molecular detection of *ompw* gene using DNA amplification based on Polymerase Chain Reaction (PCR). Sampling of fresh shrimps was conducted in traditional market of Surabaya, Sidoarjo, and Gresik City with simple random sampling method. The prevalence of pathogenic *Vibrio cholerae* was estimated in 174 samples (each 60 samples in Surabaya City, 57 samples in Sidoarjo City, and 57 samples in Gresik City) using Oxoid™ Alkaline peptone water then continued with Oxoid™ TCBS Cholera Medium and amplification of *ompw* gene with Polymerase Chain Reaction (PCR) method for pathogenic *Vibrio cholera*.

Results: The result showed that out of 174 samples, 101 samples has positive typical colony of *Vibrio cholera* in Oxoid™ TCBS Cholera Medium. Out of 101 typical samples, 28 samples (27.7%) positively contained *ompw* gene. The distribution result in each city, 8 samples (13.3%) out of 60 samples in Surabaya, 11 samples (19.2%) out of 57 samples in Sidoarjo, and 9 samples (15.8%) out of 57 samples in Gresik showed that positively contained *ompw* gene.

Conclusion: The highest result of *Vibrio cholera* positively contained in fresh shrimp is in Gresik 15.8%. However, the unhygienic process of equipping materials possibly increases the contamination of *Vibrio cholera*.

Keywords: *Vibrio cholera, ompw gene, polymerase chain reaction*

PP030

Prevalences, distribution and antibiotic sensitivity profile of *Burkholderia cepacia complex*. Isolated from Blood, Urine and Sputum Specimens in General Hospital Dr. Soetomo Surabaya

Tiar Sondang Uli Sihotang*, Agung Dwi Wahyu Widodo

Microbiology Department, Medical Faculty University of Airlangga Surabaya
Clinical Microbiology Unit General Hospital Dr. Soetomo, East Java Indonesia

*Presenting author
E-mail: agungmdimun19@gmail.com, Telp : +6281331111760

ABSTRACT

Background: *Burkholderia cepacia complex* was a nosocomial organism that primaily affects patients with immune dysfunction or with preexisting damage to their respiratory epithelium. Moreover, the occurrence of *Burkholderia cepacia complex* isolates that were resistant to multiple antibiotics keeps increasing. Those isolates may become potential reservoirs of resistant genes and cause theraupeutic difficulties in clinical settings.
Objectives: The aim of this study was to investigate of *Burkholderia cepacia complex* isolates from blood, urine, sputum specimens sent to Clinical Microbiology Unit General Hospital Dr. Soetomo from 1 July 2018 – 31 December 2018 and its antibiotic susceptibility pattern to various antibiotics.
Method: This was a retrospective studied using blood, urine, sputum specimens sent to Clinical Microbiology Unit General Hospital Dr. Soetomo, in the period of 1 July – 31 December 2018. Identification and susceptibility tests of *Burkholderia cepacia complex* were performed by the phoenix system and CLSI standard.
Results: We were successfully identified 19 isolates *Burkholderia cepacia complex*, from blood 6 isolates, urine 11 isolates, sputum 2 isolates and no isolates came from pus specimens. Most samples obtained from female patients (63%) and patient came from medical ward (58%) and from patient's age was highest at 0-40 years old range (63%). All of those isolates were resistant to Ampicillin, Piperacillin, Ampicillin-sulbactam, Amoxicillin-Clavulanate and Fosfomycin. However, most of them were sensitive to Ceftazidime (89%), Trimethoprim-Sulfamethoxazole (73%), Chloramphenicol (47%) and Levofloxacin (47%).
Conclusions: We were identified *Burkholderia cepacia complex* have multiantibiotic resistance, except Ceftazidime, Trimethoprim-Sulfamethoxazole, Chloramphenicol and Levofloxacin were sensitive.

Keywords: *Burkholderia cepacia complex, Nosocomial, General Hospital Dr. Soetomo, susceptibility pattern*

PP031

Susceptibility Pattern of *Klebsiella oxytoca* Isolated from Blood, Urine, Pus and Sputum Specimens in RSUD Dr. Soetomo

Erizka Rivani*, Eddy Bagus Wasito

Department of Microbiology, Faculty of Medicine, Airlangga University

*Presenting author
Corresponding E-mail: rivanierizka@gmail.com. Phone: +6281279021757

ABSTRACT

Background: *Klebsiella oxytoca* is considered an opportunistic pathogen and is now recognized as pathogen associated with nosocomial infections in hospitalized patients. Development of drug resistance strain is a concern and necessitates implementation of surveillance and infection control strategies.
Objective: The purpose of the present study was to identify *K. oxytoca* isolates from specimens sent to UMK-RSUD Dr. Soetomo and its susceptibility pattern to various antibiotics.
Methods: This is a retrospective study using blood, urine, pus, and sputum specimens sent to UMK-RSUD Dr. Soetomo in the period of July-December 2018. Identification and susceptibility tests of *K. oxytoca* were performed by BD Phoenix™ Automated System.
Results: Twenty-four isolates of *K. oxytoca* was isolated from clinical samples, seven isolates from blood, seven isolates from urine, and ten isolates from sputum specimens. No isolates came from pus specimens. Most of samples were from female patients (54%) and patient admitted to medical ward (67%). Distribution of patient's age was highest at 18-65 years old range (52%). All the *K. oxytoca* isolates were sensitive to Amikacin. However, these isolates showed 39% and 43% resistance to Amoxicilin-Clavulanat and Ampicillin-Sulbactam respectively. Sensitivity to Levofloxacin, Meropenem, and Gentamicin was better (89%, 87%, and 86%). Of these *K. oxytoca* isolates, 17% were ESBL positive.
Conclusion: Our data shows *K. oxytoca* susceptibility to antibiotic group by CLSI guidelines. A total 17% of our isolates were ESBL positive. Active surveillance of ESBL-producing *K. oxytoca* is needed as an essential function of hospital laboratories.

Keywords: *Klebsiella oxytoca, blood urine sputum, susceptibility pattern*

PP032

Hemorrhagic Cystitis with Vesicovaginal Fistula Complicated with Mild Right and Left Hydronephrosis and Anemia

Johannes KH Marpaung [1*], Lukman Hakim[1]

[1]*Department of Urology, Soetomo General Hospital/Faculty of Medicine Airlangga University, Surabaya, 60115 – Indonesia*

*Presenting author

Email: johannes_marpaung1984@yahoo.com, Phone : +622244688400

ABSTRACT

Background: Vesicovaginal fistula is the cause of hemorrhagic cystitis and is a rare case in Soetomo General Hospital. The cause of this case is bacterial infection based on urine culture and anatomy pathological examination.
Objective: To report a case of hemorrhagic cystitis with vesicovaginal fistula complicated with mild right and left hydronephrosis and anemia.
Methods: This was a case report study, conducted in Soetomo General Hospital Surabaya. A 55 years old woman was diagnosed with hemorrhagic cystitis accompanied with vesicovaginal fistula complicated with mild right and left hydronephrosis and anemia. There was no abnormality in vaginal toucher (VT). Laboratory examination found that this patient had anemia and leukocyturia. Urine culture showed there were *Eschericia coli*. Abdominal-pelvic CT scan with contrast revealed irregular heterogeneous solid mass in the left and right posteroinferior part of bladder wall accompanied with blood clot and left and right hydronephrosis. Vesicovaginal fistula was found in bladder. Cystoscopy revealed fistula behind the trigonum. Pathological examination showed visible inflammatory cell with fibrotic area.
Result: In this study, we gave gentamycin intravesical 80 mg in a NaCl 0.9% 50 ml solution through a silicon catheter 14 Fr. Patient expressed no complaints until she was discharged and became an outpatient in Soetomo General Hospital.
Conclusion: Hemorrhagic cystitis is an inflammatory disease that spreads to the bladder and is caused by infection or non-infection, resulting in bleeding of the bladder mucosa. Gentamycin is bactericidal aminoglycoside antimicrobial and widely used as antibiotic in urinary infection. The goal of hemorrhagic cystitis management in this case was to stop the bleeding that caused inflammation in the fibrotic area of the bladder.

Key Words: *Hemorrhagic Cystitis, Infection, Bacteria, Vesicovaginal Fistula.*

PP033

Profile of Gram Negative Pathogen and Antibiotic Susceptibility Test on Sputum Based on Colony Count

Metta Octora[1,2*], Agung Dwi Wahyu Widodo[1]

[1]*Department of Clinical Microbiology, Faculty of Medicine, Airlangga University, Surabaya;* [2]*Department of Public Health, Faculty of Medicine, Mataram University, Mataram*

*Presenting author
Email: drmettaoctora@gmail.com, Phone: +6285100646739

ABSTRACT

Background: Lower respiratory tract infections (LRTIs) causes between 5 and 10% of all deaths according to the CDC. Identification of causative pathogen and appropriate therapy may offer the best chance to minimize morbidity and/or mortality rates. The difficulty of diagnosis is to differentiate pathogens responsible for infection or colonization in patients with an endotracheal tube, because the biofilm of endotracheal tube (ETT) may contribute most to give the possibility of contamination of the sample during the collection phase. So quantitative culture positivity/colony count have been known to be useful to distinguish between pathogens and colonizing bacteria. Threshold levels of quantitative culture positivity is $>10^5$ cfu/ml.

Objective and method: To describe profile of Gram negative pathogen and antimicrobial susceptibility test (AST) on sputum at Dr Soetomo Hospital, Surabaya by colony count of endotracheal aspirates from 123 specimen based on threshold level for positivity.

Result: The most frequently isolated pathogens were *Klebsiella pneumoniae* (62%), *Pseudomonas aeruginosa* (66.7%) and *Acinetobacter baumannii* (73.7%) is significantly excellent colony count association (0.748) ($p< 0.05$). These spesies is most frequent with clinically pneumonia and prematurity diagnosis (12.4% vs 11.4%) with significant difference ($p<0.05$) dan strongly correlation (>0.5) *Pseudomonas aeruginosa* (18.2%) and *Acinetobacter baumannii* (17.4%), *Klebsiella pneumoniae* (8.3%). Antimicrobial susceptibitlity test show significant correlation with clinically diagnosis, like pipperazilin, pipperazilin tazobatam, cefazolin dan moxifloxacin ($p<0.05$) with strong correlation (0.631-0,68). Colony count and antimicrobial susceptibility test show significant correlation with weak correlation ($p<0.05$; 0.29-0.328).

Conclusion: In general, colony counts is important to show a potential pathogen in sputum specimen. The most frequently isolated pathogens at Dr Soetomo Hospital were *Klebsiella pneumoniae*, *Pseudomonas aeruginosa* and *Acinetobacter baumannii*, that have correlated significantly with colony count so this quantitative method is should be done for microbiology diagnosis and definite therapy. Antimicrobial result may also be used many clinicians for empiric therapy case by case.

Keyword: *Gram Negative Pathogen, colony count*

PP034

Phenotypic Analysis of *Pseudomonas aeruginosa* Isolated from Iatrogenic Endophtalmitis

Merry Puspita*[1], Daniel Edbert[1,2], Eddy Bagus Wasito[3]

[1] *Clinical Microbiology Specialist Study Program, Faculty of Medicine Airlangga University;* [2]*Microbiology Department, Faculty of Medicine and Health Science, Atma Jaya Catholic University of Indonesia,* [1]*Head of Clinical Microbiology Laboratory, Faculty of Medicine Airlangga University*

*Presenting author
Email: merrypuspita.ak@gmail.com , Phone: +62812-3456-2814

ABSTRACT

Background: Endophtalmitis post intraocular surgery is an important yet devastating complication for visual outcome. Post operative endophtalmitis (POE) can occur following any penetrating ocular surgery. Most of reported cases of POE occurs following cataract surgery because of the number of cases.

Case Review: Authors report seven adult patients (aged 48 – 70 years old) of 3 females and 4 males, admitted to Dr. Soetomo Hospital from April to June 2019 for iatrogenic endophtalmitis after previously had cataract surgery and intraocular lens implantation in one same eye clinic in East Java. All were diagnosed endophtalmitis by Ophtalmologist and went through vitrectomy surgery. Posterior capsule, Intra ocular lenses, and vitreous humour were obtained and cultured. Most of the isolates (9 of 11 specimens) were positive for *Pseudomonas aeruginosa*. As many as 2 of 11 specimens were positive for Coagulase Negative Staphylococci. Resistance profile and biochemical properties of *Pseudomonas aeruginosa* were compared and showed similar pattern.

Conclusion: *Pseudomonas aeruginosa* isolates from these iatrogenic endophtalmitis are plausible to come from one source

Keywords: *Pseudomonas aeruginosa, susceptibility profile, phenotypic analyses*

PP035

Antibiotic Susceptibility Pattern of *Serratia marcescens* Isolated from Blood, Urine, Pus, and Sputum Specimens in General Hospital Dr. Soetomo Surabaya

Andy Setiawan*, Agung Dwi Wahyu Widodo

Microbiology Department, Medical Faculty University of Airlangga Surabaya
Clinical Microbiology Unit General Hospital Dr. Soetomo, East Java Indonesia

*Presenting author
Email: agungmdimun19@gmail.com, Phone: +6281331111760

ABSTRACT

Backgrounds: *Serratia marcescens* was an opportunistic, gram negative, nosocomial pathogen which belonged to family, Enterobacteriaceae. It was associated with urinary, respiratory, eye, wound infections, endocarditis, osteomyelitis, septicemia, and meningitis. Additionally, *Serratia marcescens* might harbor multidrugs resistance mechanisms that could complicate treatment decisions.
Objectives: The aim of this study was to identify *Serratia marcescens* from specimens that sent to Clinical Microbiology Unit General Hospital Dr. Soetomo and it's antibiotic susceptibility pattern to various antibiotics.
Methods: This was a retrospective study using specimens sent to Clinical Microbiology Unit in General Hospital Dr. Soetomo in July-December 2018. Identification and susceptibility tests of *Serratia marcescens* were performed by Phoenix system and CLSI standard.
Results: We were identified 31 isolates of *Serratia marcescens*, from blood 22% isolates, urine 20% isolates, pus 20% isolates, and sputum 38% isolates. For the gender distribution most were female 58% For the ward distribution most were medical 38%. For the age distribution most were 1-20 years old range 39% . All of those isolates were resistant to Ampicillin, Amoxicillin, Amoxicillin clavulanic acid, Ampicillin sulbactam, Tetracycline. Antibiotics that sensitive were Gentamicin 55%, Amikacin 97%, Piperacillin tazobactam 77%, Cefepime 42%, Cefotaxime 42%, Ceftriaxone 41%, Ciprofloxacin 77%, Levofloxacin 97%, Imipenem 64%, Meropenem 68%, Trimethoprim-sulfamethoxazole 74%, Astreonam 42%, Ceftazidime 42%, Chloramphenicol 10%, Fosfomycin 64%. This data showed *Serratia marcescens* susceptible to antibiotic groups by CLSI guidelines.
Conclusion: Based on the data, antibiotics that sensitive to *Serratia marcescens* were Amikacin, Piperacillin tazobactam, Ciprofloxacin, Levofloxacin, Meropenem, Trimethoprim-sulfamethoxazole, Cefepime, Cefotaxime, Ceftriaxone, Imipenem, Astreonam, Ceftazidime, Chloramphenicol, Fosfomycin.

Keywords: *Serratia marcescens, General Hospital Dr. Soetomo, specimens, susceptibility pattern*

PP036

Comparison of Resistance Profile of *Salmonella Typhi* from Blood Culture between Dr. Soetomo Hospital, Surabaya and Atma Jaya Microbiology Laboratory, Jakarta

Daniel Edbert[1,2], Merry Puspita*[1], Elisabeth Susianiwati[2], Eddy Bagus Wasito[3]

[1] *Clinical Microbiology Specialist Study Program, Faculty of Medicine Airlangga University;* [2]*Microbiology Department, Faculty of Medicine and Health Science, Atma Jaya Catholic University of Indonesia,* [1]*Head of Clinical Microbiology Laboratory, Faculty of Medicine Airlangga University*

*Presenting author
Email: merrypuspita.ak@gmail.com , Phone: +62812-3456-2814

ABSTRACT

Background: Antibiotic resistance in Salmonella species has been one of major problems and can be considered an emerging feature of disease. Multi resistant drug Salmonella and quinolone resistant Salmonella had been reported from many places in the world.

Objective: To compare resistance profile of Salmonella enterica ssp enterica sv Typhi isolated from blood culture in Jakarta and Surabaya

Methods: Data of *Salmonella enterica ssp enterica* sv Typhi isolated from automatic blood culture system in 2014-2019 was extracted using WHONET 5.6 for data in Atma Jaya Microbiology Laboratory, Jakarta and BD Epicenter™ for data in Dr. Soetomo Hospital Surabaya. Antibiotics analysed were Ampicilin, Ceftriaxone, Ciprofloxacin, Trimethoprim Sulfamethoxazole, and Chloramphenicol. Calculations were expressed in Percent susceptible, Susceptibility and Resistance profile

Results: Blood culture positive for S. Typhi for both center were mostly obtained from pediatric patients. Most isolates are multi sensitive (13/41 isolate from Dr. Soetomo Hospital, and 33/71 from Atma Jaya Microbiology Laboratory. S. Typhi isolated in Dr. Soetomo hospital had 10 resistance profile types. Ampicillin and Ceftriaxone Non-susceptible isolates (27% and 27% respectively). One Multi Drug Resistant S. Typhi was reported. S. Typhi isolated in Atma Jaya Microbiology Laboratory had 8 resistance profile types and are mostly multi-sensitive (46.5%) but Ciprofloxacin non susceptible isolates (36.6%) are in second place.

Conclusion: S. Typhi isolated in Dr. Soetomo hospital had more variation in resistance profile and had concerning number of beta lactam resistance. S. Typhi isolated in Atma Jaya Microbiology Laboratory had concerning number of Ciprofloxacin resistance. Both centres had mostly multi sensitive isolates.

Keywords: *Salmonella Typhi, Resistance profiles, Beta-lactam, Fluoroquinolones*

PP037

Molecular Detection of a New Patotype Enteroaggregative Haemorrhagic *Escherichia coli* (EAHEC) in Pediatric Diarrhea, 2015

Wahyu Setyarini[1]*, Dadik Raharjo[1], Radita Yuniar Arizandy[1], Zakaria Pamoengkas[1], Subijanto Marto Sudarmo[2,3], Alpha Fardah Athiyyah[2,3], Toshiro Shirakawa[4]

[1]*Gatroenteritis Study Group, Institute of Tropical Disease, Universitas Airlangga, Kampus C UNAIR, Jl. Mulyorejo, Surabaya, Indonesia 60115,* [2]*Department of Pediatrics, Faculty of Medicine, Universitas Airlangga, Jl. Mayjen Prof. Dr. Moestopo No. 47, Surabaya, Indonesia 60132,* [3]*Dr. Soetomo General Hospital, Surabaya, Indonesia Jl. Mayjen Prof. Dr. Moestopo No. 6-8, Surabaya, Indonesia 60286,* [4]*Center for Infectious Disease, Kobe University Graduate School of Medicine, Kobe 650-0017, Japan*

*Presenting author
Email: wahyu_setyarini82@yahoo.com, Phone: +6282244252424

ABSTRACT

Background: Haemorrhagic Enteroagregative *E. coli* (EAHEC) has been identified as the agent responsible for one of the largest outbreaks of gastroenteritis and Hemolytic-uremic syndrome (HUS) that is transmitted through food in Germany in 2011. The hypervirulent patotype has a unique combination of two pathogens namely Enterohemoragic *E.coli* strain (EHEC) which produces shiga/verotoxin and Enteroagregative *E.coli* toxins (EAEC) which produce toxins similar to ST and hemolysin. The toxin produced by the EAHEC strain is a hybrid pathotype that combines the virulence potential of the EAEC and EHEC strains that will damage the microcirculation, cause vasculitis, and cause other toxic effects. EAHEC strains are resistant to beta-lactam antibiotics including penicillin and cephalosporin, but can be affected by carbapenem (sixth, imipenam, meropenam). The emergence of aggressive and resistant new EAHEC strains reflects vertical transmission of mutations and horizontal gene transfer between different bacterial strains that occur during the evolutionary process.

Objective: The purpose of this study was to determine the percentage of samples infected with hemorrhagic enteroagregative *E. coli* bacteria (EAHEC) in pediatric diarrhea patients at DR. Soetomo General Hospital, Surabaya, 2015

Methods: The study used PCR (Polymerase Chain Reaction) method to detect Enteroagregative *E. coli* strains (CVD432 and aaic genes) and Enterohemoragic *E.coli* (eae gene).

Results: The results showed that out of 40 stool samples examined were detected Enteroagregative *E. coli* (EAEC) 33/40; 82.5% stool samples, Enterohemoragic *E. coli* (EHEC) 4/40; 10% stool samples and Hemorrhagic Enteroagregative *E. coli* bacteria (EAHEC) 3/40; 7.5% stool samples, which caused diarrhea in pediatric diarrhea patients at Dr. Soetomo General Hospital, Surabaya.

Conclusion: The unique combination of genomic features of the Surabaya outbreak strain, containing characteristics from pathotypes EAEC and EHEC, suggested that it represents a new pathotype Haemorrhagic Enteroagregative *E. coli* (EAHEC).

Keywords: *E. coli, EAHEC, pediatric diarrhea patients, Dr. Soetomo General Hospital*

PP038

Hyperbaric Hyperoxia Exposure in Suppressing HIV Viral Replication: An experimental in-vitro in PBMC culture

Retno Budiarti[1], Siti Qamariyah Khairunisa[2*], Nasronudin[2,3,5], Kuntaman[4,5], Guritno[6]

[1]*Department of Microbiology, Faculty of Medicine, Hang Tuah University, Surabaya, Indonesia*
[2]*Institute of Tropical Disease, Airlangga University, Surabaya, Indonesia*
[3]*Department of Internal Medicine, Faculty of Medicine, Airlangga University, Surabaya, Indonesia*
[4]*Department of Microbiology, Faculty of Medicine, Airlangga University*
[5]*Airlangga University Hospital, Airlangga University, Surabaya, Indonesia*
[6]*Faculty of Medicine, Universitas Pembangunan Nasional Veteran, Jakarta, Indonesia*

*Presenting author
Email: skhairunisa@gmail.com, Phone: +6281331843627

ABSTRACT

Background: Cellular immune has an important role in response HIV infection, which is attack the infected cells to activate signaling molecule. Hyperbaric Oxygen (HBO) worked as complementary treatment for HIV infection.The production of ROS and RNS molecules during hyperbaric exposure can affect gene expression which contributes tocellular adaptative response.

Objective: This study was conducted to explore the mechanisms of cellular adaptive response to against HIV infection during hyperbaric exposure.

Methods: This study was experimental in vitro using healthy volunteer PBMCs (Peripheral Blood Mononuclear Cells) cultures infected with HIV-1.The study was conducted as a post-test only group design. The experimental unit was PBMC from venous blood of healthy volunteers which were cultured in vitro and infected by co-culturing with HIV-1 in MT4 cell line. The experimental unit consist of treatment and control group. Each group examined the expression of transcription factor NFκB, Interferon α, reverse transcriptase inhibitors (p21), and the amount of HIV-1 p24 antigen.

Results: There were increasingly significant differences in the transcription expression factors of NFκB, p21, andHIV-1 p24 antigen,as well asmRNA transcription of interferon α2 between treatment and control group. By decreasing p24 antigen showed that HBO exposure was able to suppress HIV-1 replication.

Conclusion: The exposure to hyperbaric oxygen at the pressure of 2.4 ATA and 98% oxygen was able to produce ROS and RNS molecules which play a role in cellular adaptive responses through increasing the expression of NFκB, p21. While mRNA of interferon α2 plays a role in inhibition mechanism of HIV-1 replication in cells.

Keywords: *HIV-1, PBMC, Hyperbaric oxygen, p24, NFκB*

PP039

Impact of Hiv-1 Mutation Related to Resistance of Antiretrovirus Therapy on Clinical Outcome of HIV / AIDS Patients

Brian Eka Rachman[1,2], Siti Qamariyah Khairunisa[1], Ni Luh Ayu Megasari[1]

[1]*Indonesia-Japan Collaborative Research Center for Emerging and Re-emerging Infectious Diseases, Institute of Tropical Diseases, Airlangga University, Indonesia*
[2]*Faculty of Medicine, Airlangga University, Indonesia*

*Presenting author
Email: brian.eka@fk.unair.ac.id

ABSTRACT

Background Opportunistic infection in HIV / AIDS patients remain a health problem in Indonesia because of its high morbidity and mortality. There are many factors contributing in high incidence of the opportunistic infections, one of which is Anti Retroviral Therapy (ART) resistance.
Methods There are 30 samples who were hospitalized due to opportunistic infections were included in the study. The sample is then examined for virus mutation and resistance to ARV.
Results There are 13.33% major mutations in reverse transcriptase inhibitors and 3.33% experienced major mutations in protease inhibitors. There are 10% of samples experienced high-level resistance to NRTIs and 13.33% experienced high-level resistance to NNRTIs, while 3% of patients experience high-level resistance to protease inhibitors. Majority of patients had pulmonary tuberculosis and sepsis infections 40.7%, followed by chronic candidiasis or diarrhea, 29.6% and 18.5%, respectively.
Conclusion Resistance to ARVs causes a decrease in the immune system resulting in various opportunistic infections, this is still closely related to patient compliance in consuming ARV. clinicians and the government as regulators need to make new breakthroughs to increase compliance rates.

PP040

Increased Hsp-72 Expression in Oral Mucormycosis after Treatment with Hyperbaric Oxygen

[1]Fanny Margaretha Laihad, [2]I Ketut Sudiana, [3]M. Guritno S, [4]Sumarno, [5]Sunarjo, [6]Retno Indrawati, [7]Theresia Indah Budhy, [8]Herjunianto, [9]Titut Harnanik, [10]Noengki Prameswari, [11]Arya Brahmanta, [12]Eddy Hermanto

[1,10-12] *Faculty of Dentistry Hang Tuah University Surabaya*
[2,5] *Faculty of Medicine Airlangga University Surabaya*
[3] *Faculty of Medicine UPN Veteran University Jakarta*
[4] *Faculty of Medicine Brawijaya University Malang*
[6-7] *Faculty of Dentistry Airlangga University Surabaya*
[8,9] *Naval Health Institute (LAKESLA) Surabaya*
[9] *Faculty of Medicine Hang Tuah University Surabaya*

*Presenting author
Email: fanny.mlaihad@hangtuah.ac.id, Phone: 031-8439042

ABSTRACT

Objective : Mucormycosis is a rare invasive fungal infection, but fatal when it occurs and triggered by tooth extraction, cause damage of the oral mucosa gingival tissue. Heat Shock Protein (HSP) 72 allegedly serves to protect the cell from stress and hyperbaric oxygen therapy has also been used to treat mucormycosis. The aim of this study is to analyze the expression of Hsp-72 in maxillary mucosal tissue of mucormycosis infection on dental extraction after Hyperbaric Oxygen (HBO) therapy. **Material and methods:** It was a true laboratory experimental study with post test only control group design, using 34 male marmots with mean age of 3-4 month and body weight 300-400 gram and were divided in 6 groups by random allocation: 1 control group, 1 group of dental extraction and 4 intervention group. Two group, first with injection of 10^6CFU/ml *Rhizopus oryzae* strain CBS 110.17 0,3 ml , and then tooh extraction. The other two group, dental extraction first and then rhizopus oryzae injection . The four intervention group were divided with non HBO and HBO treatment of 2,4 ATA 3x30 minute, one session, for 5 days. The expression of HSP-72 was examined by immunochemistry. **Results:** Mean and Standard deviation in Normal (K-1) 0,17±0,12; Dental extraction (K-2) 0,62±0,15; *Rhizopus oryzae* injection and dental extraction non HBO (K-3) 0,52±0,19; *Rhizopus oryzae* injection and dental extraction with HBO (K-4) 6,07±2,79; Dental extraction and *Rhizopus oryzae* injection non HBO (K-5) 1,18±0,82 ; Dental extraction and *Rhizopus oryzae* injection with HBO (K-6) 2,92±0,84. **Conclusion:** Hyperbaric oxygen therapy 2,4 ATA, 3x30', one session for 5 days has been significantly proven to increase the expression of Hsp-72 in macrophage of maxillary mucosal tissue which infected by mucormycosis on dental extraction 35,7 times (K-4) and 17,2 times (K-6) more higher than normal group.

Keywords: *expression of Hsp-72, hyperbaric oxygen therapy, oral mucormycosis, tooth extraction.*

PP041

The Forming of Bacteria biofilm from *S. mutans* and *Aggr. actinomycetemcomitans* as a marker for Early Detection in Dental Caries and Periodontitis

Kriswandini IL[1*], Diyatri I[2], Tantiana [3], Nuraini P [4], Berniyanti T [5], Putri IA [6], Tyas PNBN[7]

[1), 2)]dan [3)]Staff of Departement Oral Biology
[4)] Staff of Departement Pedodontic
[5)] Staff of Departement Dental Public Health
[6) & 7)]Undergraduate Student of Dental Medicine, Faculty of Dental Medicine Airlangga University Surabaya-Indonesia

*Presenting author
Email: indah-l-k@fkg.unair.ac.id,phone: +6281217416633

ABSTRACT

Background: *Streptococcus mutans (S.mutans)* and *Aggregatibacter actinomycetemcomitans (A.a)* are bacteria that cause infection diseases in the oral cavity. These bacteria have the ability to form biofilms. The study of bacterial biofilm proteins was used as an alternative to early prevention for oral infections. The biofilms formed by the two bacteria in this study were induced with 5% glucose, 5% lactose, 5% soy protein, and 5% iron. Based on the results of biofilm formation, molecular weight characterization was carried out. It would be used for the purpose of making an Infections Detection Kit in the oral cavity.
Objective: Biofilm proteins forming of *S.mutans* and *A.a* that induced with 5% glucose, 5% lactose, 5% soy protein, and 5% iron will use as marker for early detection Dental caries and Periodontitis.
Methosds : SDS-PAGE electrophoresis technique was used in the study to measure the molecular weight of *S. mutans* and *A.a* biofilms formed.that induced with 5% glucose, 5% lactose, 5% soy protein, and 5% iron
Results: Biofilm bands of *S. mutans* and *A.a* were formed with the various numbers depending on the induction used. *S. mutans* induced with 5% glucose had one protein band (61.7 kDa), while *A.a* also produced one protein band (37.5 kDa). *S. mutans* induced with 5% lactose had four protein bands (180 kDa; 153.9 kDa; 43.9 kDa; 37.5 kDa), whereas *Aa* had five protein bands (77.9 kDa, 52.6 kDa, 46.8 kDa, 36.6 kDa, and 28.5 kDa). *S. mutans* induced with 5% soy protein had seven protein bands (157.9 kDa; 86.6 kDa; 66.5 kDa; 50.1 kDa; 37.9 kDa; 32.3 kDa; 32.4 kDa; 29.4 kDa) and Aa also has seven protein bands (77.9 kDa, 71.3 kDa, 47.4 kDa, 40.4 kDa, 37.2 kDa, 28.8 kDa, and 11.8 kDa). *S. mutans* and *A.a* which were induced with 5% iron did not form any protein bands. (This results are early chararterization of the biofilm that will to be marker for early detection infection diseases in oral (Dental Caries and Periodontitis)
Conclusion: *S. mutans* bacteria induced with 5% glucose had one band of biofilm protein, with 5% lactose had four bands of biofilm proteins, and with soy protein had seven bands of biofilm protein, but with 5% iron did not produce any protein bands and neither did *A.a*.

PP042

Practices of Complementary Feeding for Stunting Children Under the Age of Two Years

Inne Soesanti[1]* , Pinky Saptandari[2], Sri Adiningsih [3], M. Bagus Qomaruddin[4]

[1] Public health doctoral of program, Faculty of Public Health, Universitas Airlangga, Surabaya 60115, [2]Deprtment of Anthroplogy, Faculty of Social Science and Political Science, Universitas Airlangga, Surabaya 60284, [3]Department of Health Nutrition, Faculty of Public Health, Universitas Airlangga, Surabaya 60115, [4] Deprtment of Health Promotion and Behavioral Science, Faculty of Public Health, Universitas Airlangga, Surabaya 60115

* Presenting author
Email: insantie@gmail.com, Phone: +6282230070342

ABSTRACT

Background: Stunting is caused by chronic malnutrition and recurrent infectious diseases. The prevalence of stunting of under two years old children in Pasongsongan village is below 20%, but this shows that there is stunted growth in early age. Sea fish is the main source of animal food in this village. It turned out that children are not given sea fish, which should have begun to be introduced to animal foods at the age of 9 months.
Objective: To find out the practice of feeding stunting children under the age of two years.
Methods: Research using qualitative methods. Twelve mothers of children under the age of two were informants. Data collection was done by interview, observation and documentation.
Results: practice of feeding stunting children under the age of two consumes porridge until the age of one year, the reason being that the intestine of the child is not strong enough to receive coarse-textured foods such as eggs, fish, beef and chicken. This means that the food consumed contains more carbohydrates. Sea fish is given after the child can walk because of the worm myth. This myth has been going on for a long time and fish is a food taboo for children. Prohibition of giving fish and other types of animal foods that contain lots of protein can affect growth.
Conclusion: practice of feeding stunting children under the age of two is influenced by culture. The mindset of mothers of stunting children under the age of two regarding feeding practices must be changed.

Keywords: *feeding practice, stunting, child under two years old*

PP043

Field Evaluation of Simple Build Trap for Monitoring Potential Vector against Mosquito Borne Diseases in Indonesia

Kris Cahyo Mulyatno[*,1], Etik Ainun Rohmah[1,2], Ilma Abidina Cahya[3], Rosmanida[4,1], Sri Subekti[5,1]

[1]*Laboratory of Entomology, Institute of Tropical Disease, Universitas Airlangga, Surabaya, Indonesia, 60115*
[2]*Master Program of Tropical Medicine, School of Medicine, Universitas Airlangga, Surabaya, Indonesia , 60115*
[3]*Department of Biology, Faculty of Science and Technology Alumni, Universitas Airlangga, Surabaya 60115.*
[4]*Department of Biology, Faculty of Science and Technology, Universitas Airlangga, Surabaya 60115*
[5]*Faculty of Fisheries and Marine, Universitas Airlangga, Surabaya, Indonesia , 60115*

*Presenting author
Email: kriscahyo@staf.unair.ac.id, Phone: 62-31-5992445-46

ABSTRACT

Background: Light traps are one of the most common attractive methods for the collection of mosquitoes in field. Although light traps are generally referred to as "CDC light traps", different models, hand made with used drink bottle has been tried. Simple light trap, named SBT, made with plastic bottle and featured with a LED UV light and handy design.
Objective: In this study we evaluate performances of SBT trap under field conditions for mosquito sampling during surveillance of mosquitoes borne diseases in Indonesia.
Methods: SBT and CLT (each 5 traps) trap were placed in residential, park and forest area in Surabaya city on April 2018.
Results: The SBT trap captured 14247 mosquitoes, belonging to 6 genus (*Aedes, Culex, Anopheles, Aedeomyia, Mansonia* and *Uranotaenia*) and 16 species were collected during the study period : *Ae. aegypti* (224), *Ae. albopictus* (328), *Cx. quinquefasciatus* (4941), *Cx. tritaeniorhynchus* (373), *Cx. bitaeniorhyncus* (47), *Cx. sinensis* (5), *Cx. whitei* (32), *Cx. sitiens* (6919), *Cx. vishnui* (284), *Cx. pseudovishnui* (15), *Cx. gelidus* (55), *An. vagus* (30), *An. subpictus* (347), *U.lateralis* (9), *Aedomyia sp*. (12) and *M. uniformis* (626). The total number of mosquitoes captured with SBT trap was higher than CLT trap, with significant difference between the two trapping methods was found. PCR detection from mosquitoes collected from SBT show DENV, Chikungunya and others Flavivirus.
Conclusion: According to these results, SBT trap has acceptable performance in being an efficient tool for mosquitoes sampling, mainly in comparison with the CLT trap models especially when handy design and low cost consumption are key factors in field studies.

Keywords: *mosquito trap, SBT, CDC light trap, mosquito borne diseases*

LIST OF ALL PARTICIPANTS

Name of Participants	Institution
Aamir Shehzad	Faculty of Veterinary And Animal Sciences Universitas Airlangga
Abdul Hadi Furqoni	Institute of Tropical Disease, Universitas Airlangga
Abdul Muin Hasan Busri	Fakultas Kedokteran, Universitas Airlangga
Abraham Surjantoro	Department of Plastic Reconstructive and Aesthetic Surgery
Adi Rizal Soleh	Fakultas Kedokteran, Universitas Airlangga
Agam Wirayudha	Satdikmapapk
Agnes Dwi Sis Perwitasari	Institute of Tropical Disease Universitas Airlangga
Agung Malinda Wijaya	Orthopedic Departement of Sutomo General Hospital-Airlangga University
Agustinus Rizki Wirawan Riadi	Unair- pulmonology resident
Aldy Mulia Hati Setya	Department of Plastic Reconstruction and Aesthetic Surgery
Alfa Fuddilah Fitri	Klinik Pratama Ubaya
Alicia Margaretta Widya	Dr Soetomo General Hospital
Almas Nada Salsabila	Universitas Airlangga
Alverina Cynthia Sukmajaya	Fakultas Kedokteran, Universitas Airlangga
Ananita novia Silviarianti	Kementrian pertahanan RI direktorat jenderal kekuatan pertahanan
Andre Yuindartanto	Dept of Dermatology and Venereology, Faculty of Medicine, Universitas Airlangga
Andy Setiawan	Medical Faculty of Airlangga University
Ariza Sari	Indonesian Coffee and Cocoa Research Institute (ICCRI)
Arvi Dian Prasetia Nurwidda	Fakultas Kedokteran, Universitas Airlangga
Aussie Tahta Maharani	Institute of Tropical Disease, Universitas Airlangga
Binti Ibtidaiyatus Sholichah	Faculty of Pharmacy Universitas Airlangga
Brian Eka Rachman	Medical Faculty of Airlangga University
Christian Adithya Suwito	Klinik Pratama Ubaya
Christian Hanjokar	Klinik Pratama Ubaya
Citrawati Dyah Kencono Wungu	Universitas Airlangga
Daniel Edbert	RS Dr. Soetomo
Debby Fauziah Suryani	Universitas Airlangga
Defi Kartika Sari	Institute of Tropical Disease, Universitas Airlangga
Devi Oktafiani	Universitas Airlangga
Dewi rachmi Sari	Periodonsia FKG UNAIR
Dewi Setyowati	Universitas Airlangga
Diah Priyantini	Institute of Tropical Disease, Universitas Airlangga
Dian Ayu Eka Pitaloka	Institut Teknologi Bandung
Dika chandra Bintari	Kementrian pertahanan republik indonesia
Dimas Aji Perdana	Internal Medicine Departement - Airlangga University
Dinar Adriaty	Institute of Tropical Disease-Universitas Airlangga
Dionisia Vidya Paramita	Otorhinolaryngology Head and Neck Surgery Department, Medical Faculty, Universitas Airlangga
Dwi Lestari Avianti	Navy
Dwi Wahyuning Asih	Fakultas Kedokteran, Universitas Airlangga

Efendi Nugroho	Universitas Airlangga
Eka Airlangga	Universitas Muhammadiyah Sumatra Utara
Eka Febriyanti	Universitas Muhammadiyah Surakarta
Elsa Rosalina	Department of Otorhynolaryngology Head and Neck Surgery, Faculty of Medicine, Universitas Airlangga / RSUD Dr. Soetomo
Emily Gunawan	Institute of Tropical Disease, Universitas Airlangga
Eny Purwoningsih	Medical Faculty of Airlangga University
Erike A. Suwarsono	Faculty of Medicine, UIN Syarif Hidayatullah Jakarta
Erizka Rivani	Clinical microbiology Airlangga University
Erwin Astha Triyono	Department of Internal Medicine, Faculty of Medicine - Airlangga University, Surabaya, Indonesia
Fara Nayo Marisa	Universitas Airlangga
Faradila Khoirun Nisa Hakim	Medical Faculty of Airlangga University
Farida Dwi Handayani	B2P2VRP Salatiga
Fitria Hari Wibawati	Universitas Airlangga
Fransiskus Seta Prana Kusuma	Bedah Anak FK UNAIR
Gigih Imanta Jayantri	Indonesia 1st Fleet (TNI AL)
Hamidah Retno Wardani	Medical Faculty of Airlangga University
Handoko Hariyono	Internal Medicine Department of Airlangga University
Heni Puspitasari	Institute of Tropical Disease, Universitas Airlangga
Hepy Herliniati	Universitas Airlangga
Herisa Nataliana	Universitas Airlangga
Hermin Ratnani	Veterinary Medicine of Airlangga University
Hildegardis Dyna	Kementrian pertahanan RI direktorat jenderal kekuatan pertahanan
Hilkatul Ilmi	Institute of Tropical Disease, Universitas Airlangga
Hotimah Masdan Salim	Faculty of Medicine, University of Nahdlatul Ulama Surabaya
I Gede Parama Gandi Semita	Department of Cardiology and Vascular Medicine, Faculty of Medicine, Universitas Airlangga
I Gusti Putra Swabuana Purwoyudho	Fakultas Kedokteran, Universitas Airlangga
I Ketut Budi Santosa	Patubel Kemhan
Ika Trisharyanti Dian Kusumowati	Faculty of Pharmacy, Universitas Muhammadiyah Surakarta
Ilham Harlan Amarullah	Institute of Tropical Disease, Universitas Airlangga
Indah Listiana	Fakultas Kedokteran Gigi, Universitas Airlangga
Indri Dwi Murbani	Satkes Kodiklatal
Indria Lovita	Universitas Airlangga
Inne Soesanti	Doctoral Public Health Program, Faculty of Public Health, Universitas Airlangga
Intan Pandu Pertiwi	BBTKLPP Jakarta Kemenkes
Ishak Samuel	Universitas airlangga
Isna Mahmudah	Institute of Tropical Disease, Universitas Airlangga
Jansen Hatuaon Pasaribu	Airlangga University
Jimmy Kuncoro	Airlangga University
Johannes Kristianto Hamonangan Marpaung	Universitas Airlangga
Juen Carla Warella	Universitas Airlangga

Junis Tumewu	Dr soetomo general hospital
Khairan Irmansyah	Medical Batalyon Commander Kostrad
Khairunnida Rahma	Fakultas Kedokteran, Universitas Airlangga
Kurnia Arma Wijayanti	Medical Faculty Airlangga University
Laksmi Ayu Suryaning Tyas	Departemen mikrobiologi klinik FKUB/RS dr.Saiful Anwar Malang
Lia Ahyuni Mulya	Faculty of Pharmacy Universitas Airlangga
Lidya Tumewu	Institute of Tropical Disease, Universitas Airlangga
Lucia Tri Suwanti	Institute of Tropical Disease, Universitas Airlangga
Lyndia Effendy	Department of Clinical Microbiology, Faculty of Medicine, Airlangga University
Maria Cellina Wijaya	Medical Faculty of Airlangga University
Maria Magdalena Greda Putriana	Kemenhan
Maulana Farid Rizki	Rindam XVII/Cenderawasih
Maya Wardiana	Departemen Ilmu Kesehatan Kulit dan Kelamin FK Unair RSUD Dr. Soetomo
Mega Nurmalasari	Kodiklatal
Merry Puspita	PPDS Mikrobiologi Klinik Unair
Mery Puspitasari	PPDS Mikrobiologi Klinik Unair
Metta Octora	Universitas Airlangga
Moch. Fatichul Huda	TNI AD
Muhammad Afif Sholehuddin	Fakultas Kedokteran University Airlangga
Muhammad Luthfi	Universitas Airlangga
Muhammad Miftahussurur	Institute of Tropical Disease, Universitas Airlangga
Mulia Indah Chandra Pertiwi	Fakultas Kedokteran, Universitas Airlangga
Myrna Adianti	Faculty of Vocational Study, Universitas Airlangga
Naimah Putri	Universitas Airlangga
Nanik putri Setyowati	Universitas Airlangga
Naning Nugrahini	BBTKLPP BANJARBARU
Nastiti Intan Permata Sari	Universitas Airlangga
Nataniel Tandirogang	Faculty of Medicine Mulawarman University
Neviana Fitri Lestari	Universitas airlangga
Ni Luh Ayu Megasari	Universitas Airlangga
Ni Njoman Juliasih	Institute of Tropical Disease
Ni Njoman Juliasih	Faculty of Economy and Business, Universitas Airlangga, Surabaya
Nindya Tresiana Putri	Faculty of Pharmacy, Universitas Airlangga
Nong Nabila	Fakultas Kedokteran Universitas Airlangga
Noryanto Ikhromi	Faculty of medicine Universitas Airlangga
Nurima Diyah	Universitas Airlangga
Nuthqi Alif	Fakultas Kedokteran, Universitas Airlangga
One Asmarani	Institute of Tropical Disease, Universitas Airlangga
Ossy wijaya Iriandoko	Universitas Airlangga
Prihartini Widiyanti	Institute of Tropical Disease, Universitas Airlangga
Pristiawan Navy Endraputra	Department of CLinical Mikrobiology / Faculty of Medicine, Airlangga University
Prize Emma Valianto	Universitas Airlangga

Puspa Wardhani	Clinical Pathology Department, Faculty of Medicine, Universitas Airlangga
R. Handhito Satriyo	Fakultas Kedokteran, Universitas Airlangga
Radita Yuniar Arizandy	Institute of Tropical Disease, Universitas Airlangga
Rahmi Dianty	Mikrobiologi Klinik FK UNAIR RSUD Dr Soetomo
Rakhmatul Binti Sulistya	Universitas Airlangga
Randi Sagasiousman	Biology Vaccine Institute
Ratna Kusumawati	Universitas Airlangga
Rattnawadee Nanlar	Faculty of Tropical Medicine Mahidol University
Rebekah Setiabudi	Departemt of Microbiology Airlangga University
Rezky Sagita Girsang	Surgery Resident
Ricky Indra Alfaray	Faculty of Medicine Universitas Airlangga
Ricky Indra Alfaray	Institute of Tropical Disease, Universitas Airlangga
Rina Normanita	Universitas Airlangga
Rina Ynita	Faculty of Medicine, Universitas Sumatera Utara
Rio Tasti Surpa	TNI AL
Risqa Novita	Puslitbang Biomedis dan teknologi Dasar Kesehatan, Balitbang Kemenkes
Riza Muhammad Zulham	Puskesad
Rizki Nur Rachman Putra Gofur	Universitas Airlangga
RM Abdul Adjid	BALAI BESAR PENELITIAN VETERNER
Rury Mega Wahyuni	Institute of Tropical Disease Universitas Airlangga
Samsul Bahri	Departement Pulmonology, Universitas Airlangga
Shinta Arya	Universitas Airlangga
Silvia Sutandhio	Unika Widya Mandala Surabaya
Siriprang Chotchaimongkol	Faculty of Tropical Medicine Mahidol University
Siti Churrotin	Institute of Tropical Disease, Universitas Airlangga
Siti Qamariyah Khairunisa	Institute of Tropical Disease, Universitas Airlangga
Siwipeni Irmawanti Rahayu	Faculty of Medicine, Universitas Brawijaya
Soroyo Lordo	Division of Infectious Diseases and Tropical Medicine, Department of Internal Medicine Indonesia Army Central Hospital Gatot Soebroto
Sri Anggarini Rasyid	STIKES Mandala Waluya Kendari
Subhan	BBTKLPP Jakarta, Ministry of Health
Sulastrianah	Halu Oleo University
Supriyadi	BBTKLPP BANJARBARU
Suryani Dyah Astuti	Fakultas Sains dan Teknologi, Universitas Airlangga
Tasnim	Sekolah Tinggi Ilmu Kesehatan Mandala Waluya Kendari
Teguh Hari Sucipto	Institute of Tropical Disease, Universitas Airlangga
Terrence Timothy Evan Lusida	Medical Faculty of Airlangga University
Tiar sondang uli Sihotang	Medical Faculty of Airlangga University
Tiara Mayang Pratiwi Lio	STIKES Mandala Waluya Kendari
Timbul Partogi H. Simorangkir	Indonesian Army's Pharmaceutical Institute
Timmy Wibisono	Kementrian pertahanan RI direktorat jenderal kekuatan pertahanan
Titut Harnanik	Department of Hyperbaric, Drs. Med. R. Rijadi S., Phys. Naval Health

	Institute, Indonesian Navy, Surabaya, Indonesia.
Tutik Sri Wahyuni	Universitas Airlangga
Ucik Nurul Hidayati	Universitas Airlangga
Umi Salamah	Universitas Airlangga
Wahyu Cahyana Hidayat	Indonesia Air Force
Wahyu Choirur Rizky	Sulaiman Al Rajhi Colleges
Wahyu Herlambang	Medical Faculty of Airlangga University
Wahyu Setyarini	Institute of Tropical Disease, Universitas Airlangga
Wendy Budiawan	Medical Faculty of Airlangga University
Wijayanti Siswanto	Universitas Airlangga
Wiwied Ekasari	Faculty of Pharmacy, Universitas Airlangga
Yogi Ertanto	Lembaga Biologi Vaksin Puskesad
Yohanes Aprianto Senduk Widodo	Universitas Airlangga
Yudi Pramono	POLTEK HANG TUAH JAKARTA PRODI FARMASI
Yudith Annisa Ayu Rezkitha	Institute of Tropical Disease, Universitas Airlangga
Yuli Subiakto	Lafiau Roostyan Effendie
Yunita Kholilaili Saras Wati	Universitas Airlangga
Zainal Ilyas Nampira	Balai Besar Teknik Kesehatan Lingkungan dan Pengendalian Penyakit Jakarta
Zayyin Dinana	Institute of Tropical Disease, Universitas Airlangga
Zida Maulina Aini	Faculty of Medicine Universitas Halu Oleo

SPONSORSHIP

INSBIOMM

International Conference on Infectious Diseases, Biothreats, and Military Medicine

Universitas Airlangga

Institute of Tropical Diseases

Supported by: Indonesian Armed Forces Surgeon General Office

Campus C UNAIR, Jl. Mulyorejo Surabaya 60115, Indonesia

+62 85233794007

insbiomm@itd.unair.ac.id

insbiomm@gmail.com

www.itd.unair.ac.id/insbiomm