



BADAN PENERBIT DAN PUBLIKASI
UNIVERSITAS GADJAH MADA



THE 2nd INTERNATIONAL CONFERENCE ON HEALTH SCIENCES

18–19 August 2017 / Yogyakarta, Indonesia



Accredited by:





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The 2nd UGM International Conference on Health Sciences
Program and Abstract Book

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Welcoming Remarks from Chairman

On behalf of the Organizing Committee, we have the great pleasure to welcome all of you to the 2nd International Conference on Health Sciences (ICHS) in Yogyakarta, Indonesia. This conference is the second Universitas Gadjah Mada (UGM) Annual Scientific Conference on Health Sciences.

We are very proud to be able to host it here at UGM with all of you.

I would like to express my gratitude to all of you who so generously helped us make this event come together smoothly, UGM, Distinguished Lecturers and Committee, we couldn't have done it without you!

You have all chosen to be a part of our Conference because of our mutual passion for "Current Concept in Infectious Diseases: Emerging and Re-emerging Infectious Diseases, Tropical Infectious Diseases, Neglected and Sexually Transmitted Diseases, Drug Resistance, and Technology Related Infectious Diseases". Your passions help us all to come together as one and the energy we create as one allows us to achieve our individual as well as group goals. We need you as much as you need us and this is why we are so happy to have you join us here at UGM.

Here at UGM we value and cherish the friendships and partnerships we make as they more often than not prove to be formed on a strong common ground which in turn makes them last for many many, years to come!

We wish you a warm welcome to the conference and hope that you will enjoy the ICHS 2017.

Thank you.

Dr. Gunadi, Ph.D, Pediatric Surgeon

Welcoming Remarks

from the Rector of Universitas Gadjah Mada

Dear distinguished invited speakers, participants, ladies and gentlemen,

On behalf of Universitas Gadjah Mada, it is my great pleasure to welcome you to Yogyakarta for the 2nd International Conference on Health Sciences (ICHS 2017), hosted by Universitas Gadjah Mada (UGM).

This gathering of academics and professionals from a diverse array of disciplines in the health sciences could not come at a more opportune time. The issue of health continues to be a major global concern. In certain respects, it has even taken on greater importance, with some aspects of medicine once thought to be in our past ostensibly making a return. The fight against infectious disease, for example, was thought to be over in the early eighties. In recent years, however, it has once again entered the public consciousness due to climate change and increasing global migration. Infectious disease is no longer a problem isolated to tropical countries, and reports have suggested that the geographical reach of many neglected tropical diseases has extended to subtropical countries. Thus, it is our responsibility to support and lead the improvement of the health and lives of people afflicted by infectious diseases, through the development of improved diagnostics, treatments, and preventive mechanisms.

It is my full expectation that this year's conference will contribute to this endeavor in innumerable ways, and further strengthen the ICHS's place as an excellent platform for the exchange of clinical and scientific knowledge on the latest developments and emerging challenges in health sciences, especially on "Current Concept in Infectious Diseases: Emerging and Re-emerging Infectious Diseases, Tropical Infectious Diseases, Neglected and Sexually Transmitted Diseases, Drug Resistance, and Technology Related Infectious Disease."

Over its 67 years as a university on the frontlines of scientific progress, Universitas Gadjah Mada has built a reputation of pushing the boundaries of discovery and societal advancement, serving as a valuable source of knowledge in the medical profession. With our Annual Scientific Conference Series, we have sought to channel this bold spirit, bringing together some of the brightest minds in Indonesia and the rest of the world to share the latest findings in their respective fields. And we are especially proud that this series has been so successful in pushing forward our vision for the future of science in Indonesia, in which research is abundant, international

collaboration is robust, and Indonesian authors are prominent in international publications with a global readership.

I am humbled by the turnout for the ICHS 2017, which has surpassed even our own expectations. By all measures, this year's conference should be the best one yet.

We would like to thank our distinguished invited speakers in advance for what I anticipate will be some very enlightening talks. I'm especially looking forward to finding out what sorts of lively discussions these talks will engender. Special thanks as well to the members of the organizing committee, along with the entire staff of UGM's Badan Penerbit dan Publikasi (BPP), for their tireless efforts to make this conference a reality. And of course, we are grateful to all of the conference participants in attendance here today. It is thanks to you that we will be able to make this the most memorable ICHS yet.

The events over the next two days will allow us to gain a deeper understanding of the latest advances in the health sciences, and I encourage all participants to take advantage of this opportunity to build and reinforce your scientific networks, reconnect with old colleagues, and make a few new friends. With that said, I wish everyone here a restful stay in our fair city of Yogyakarta, and above all a successful ICHS 2017.

Thank you.

Prof. Ir. Panut Mulyono, M. Eng., D.Eng.

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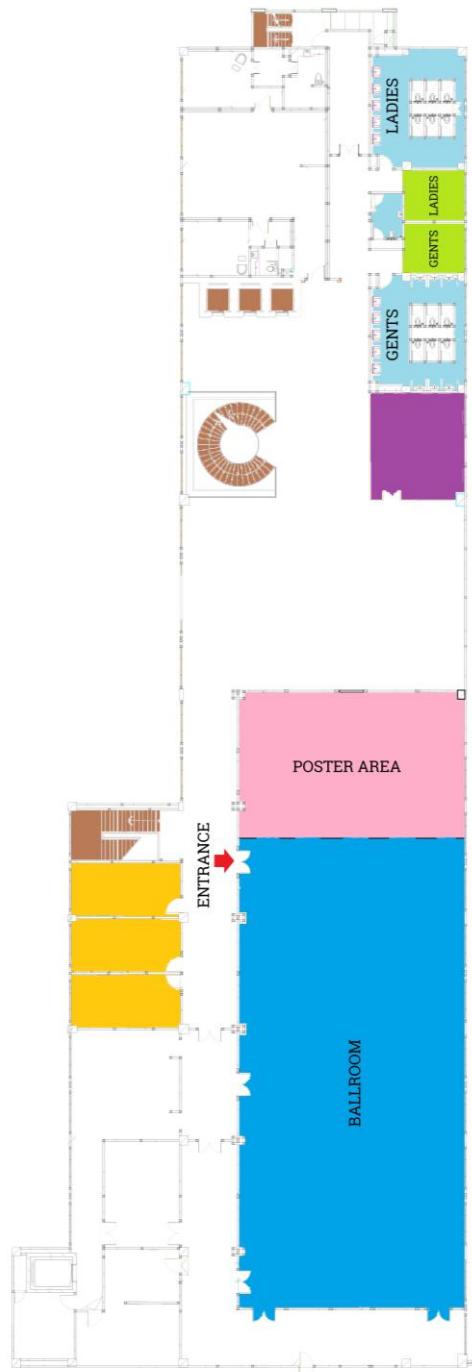
VENUE



4th FLOOR

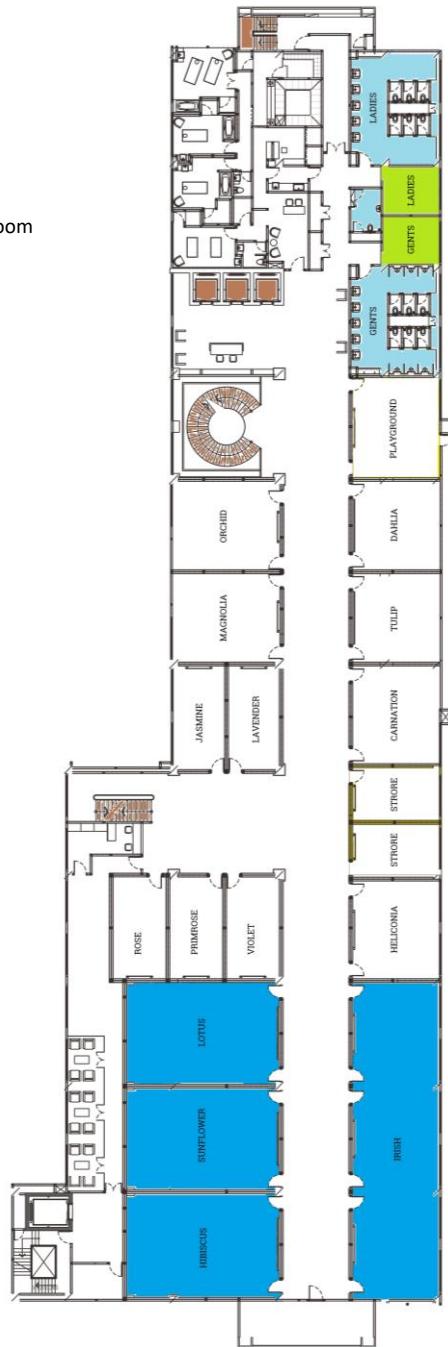
THE EASTPARC MAIN BUILDING

- Conference room
- Committee room
- Prayer room
- Rest room
- Stairs / lift
- VIP transit



3rd FLOOR THE EASTPARC MAIN BUILDING

- Conference room
- Prayer room
- Rest room
- Stairs / lift



THE 2nd INTERNATIONAL CONFERENCE ON HEALTH SCIENCES
VENUE //

ORAL PRESENTATION



Oral presentations at the ICHS 2017 will be held on both days of the conference in parallel symposia sessions. Presenters will have the opportunity to present their research to an audience of like-minded colleagues, while participants will be able to attend any presentation in the symposium of their choice.

POSTER PRESENTATION



Poster presentations at the ICHS 2017 will be held on both days of the conference in the ballroom. Both presenters and attendants alike are encouraged to participate in poster sessions.

Oral presentation guidelines

Oral presentations will be held in panels with multiple presenters per session.

Each participant should be present at the designated time and venue.

Each session will have two jurors to score the presentation based on the novelty, content, clarity of explanation and QA. **The winner of oral presentation will be announced at the ICHS 2017 closing ceremony.**

Each presenter will be allocated 15 minutes to deliver their presentation, including 10 minutes presentation and 5 minutes QA with jurors and attendees.

The presentation file should contain maximum 10 PowerPoint slides (**excluding** the presentation title and pages for acknowledgements). Presenters are responsible for the content of their presentation.

The following will be available for presenters to use during their presentation:

- Laptop
- Projector and screen
- Single screen
- Microphone
- Laser pointer

Submitting your presentation file

All presenters are required to submit their presentation file during registration on the first day of the conference. Computers will be provided for this purpose in front of the conference room. It is not possible to use your own computer for your presentation.

- Your presentation file should be in a format compatible with Microsoft PowerPoint 2007 (or earlier).
- The filename of the submitted slide presentation must be under this format (CodeOfAbstract_PresenterName) i.e H1-01_JaneDoe.
- Bring your presentation on a USB memory stick or CD-ROM. Facilities will not be provided for other submission methods.
- We highly recommend that you keep a backup of your presentation file on a second USB stick or CD-ROM.
- Please do not embed videos in your presentation.

Poster guidelines

Poster presentations will be held in panels with multiple presenters per session.

Each participant should be present at the designated time in front of his/her poster

Poster sessions at the ICHS 2017 will comprise short presentations of up to 5 minutes, including 3 minutes presentation and 2 minutes QA with jurors. **The winner of poster presentation will be announced at the ICHS 2017 closing ceremony.**

Each poster will have two jurors to score the presentation based on the novelty, content, clarity of explanation and QA.

Posters must be ready on the first day of the conference and registered at the poster registration desk in front of the ballroom. Committee will provide space and equipment to attach posters.

All posters can be detached by the end of the conference. There will be one best poster presenter for each day.

Poster preparation

Please note when preparing your poster:

- Size of the poster should be A0; i.e. 46.8 inches by 33.1 inches (1189×841 mm).
- Poster should be in portrait orientation.
- Poster should be readable at a distance of 1–2 m, with a line spacing of 1.5 or 2.

Include the following in your poster:

- Title of your poster
- Your name, faculty advisor's name, names of collaborators, and name of department
- Introduction (or Objectives)
- Methods
- Results (of Findings)
- Discussion
- Conclusions
- Acknowledgments (if necessary)

Maximize the impact of your poster

Maximize the impact of your poster by making it easier to read. We recommend adhering to the following:

- Use high contrast; i.e. dark text on light background or light text on dark background.
- Use only two or three colors; too many colors can be distracting.
- Remove information that is not relevant to the topic to avoid large blocks of text.
- Use bold or italics to emphasize a point instead of underlining.
- Suggested font sizes and styles:
 - Main title: 78 pt (bold, uppercase)
 - Author names: 72 pt (bold, title case)
 - Affiliation: 48 pt (normal, title case)
 - Email address: 36 pt (bold)
 - Headings: 36 pt (bold, uppercase)
 - Body of text: 24 pt
 - Citations and acknowledgments: 22 pt or lower

CONFERENCE SCHEDULES



Conference schedules

Friday, 18 August 2017

Time	Program	Venue
07:30 – 08:00	Registration	Ballroom lobby
OPENING CEREMONY		
08:00 – 08:10	dr. Gunadi, Ph.D., Sp.BA. ICHS 2017 Chairman	Ballroom
08:10 – 08:20	Prof. Ir. Panut Mulyono, M.Eng., D.Eng. Rector of Universitas Gadjah Mada	Ballroom
08:20 – 08:30	TRADITIONAL DANCE PERFORMANCE	Ballroom
KEYNOTE SPEAKERS		
08:30 – 09:00	How to prevent and control of infections diseases in Indonesia? dr. M. Subuh, MPPM General Director for Prevention and Control of Disease, Ministry of Health Indonesia	Ballroom
09:00 – 09:30	Development of new Rotavirus Vaccine in Indonesia Prof. Yati Soenarto, Sp.A(K), Ph.D. Universitas Gadjah Mada, Indonesia	Ballroom
09:30 – 10:00	Emerging raising trends of sexually transmitted infection among HIV-infected person Prof. Nai-Ying Ko, Ph.D. National Cheng-Kung University, Taiwan	Ballroom
10:00 – 10:30	Research strategy for TB elimination in Indonesia dr. Yodi Mahendradhata, M.Sc., Ph.D. Universitas Gadjah Mada, Indonesia	Ballroom
10:30 – 11:00	COFFEE BREAK	Ballroom

EMERGING AND RE-EMERGING INFECTIOUS DISEASE SYMPOSIUM

10:45 – 11:05	Recent update in Zika Virus Dr. Khin Saw Myint Eijkmen Institute, Indonesia	Ballroom
11:05 – 11:25	Avian Influenza Vaccine development Prof. drh. Widya Asmara, S.U., Ph.D. Universitas Gadjah Mada, Indonesia	Ballroom
11:25 – 11:45	Integrated therapy for HIV and Tuberculosis Prof. Soumnuek Sungkanuparph, MD., Ph.D. Mahidol University, Thailand	Ballroom
11:45 – 12:00	DISCUSSION	Ballroom
12:00 – 13:00	LUNCH AND PRAYER	Ballroom lobby
13:00 – 14:00	POSTER PRESENTATION I	Ballroom

TROPICAL INFECTIOUS DISEASE SYMPOSIUM

14:00 – 14:20	Eliminate Dengue Project – Yogyakarta: use of Wolbachia <i>Aedes aegypti</i> for Dengue control dr. Eggi Arguni, M.Sc., Ph.D., Sp.A. Universitas Gadjah Mada, Indonesia	Ballroom
14:20 – 14:40	Mapping Malaria transmission Prof. Din Syafrudin Eijkmen Institute, Indonesia	Ballroom
14:40 – 15:00	The emergence of antibiotic resistance by mutation Dr. Katsumi Shigemura, Ph.D., Urologist. Kobe University, Japan	Ballroom
15:00 – 15:15	DISCUSSION	Ballroom
15:15 – 15:30	COFFEE BREAK	Ballroom
15:30 – 17:00	ORAL PRESENTATION I	Parallel rooms

POSTER PRESENTATION I

BALLROOM

Time	Code	Title and Authors
13:00 – 14:00	A1-014	Different test of the average waiting time between the registration of general and JKN outpatients in RSUD dr. Soehadi Prijonegoro Sragen Anggita Dyah Astari and Savitri Citra Budi
	A1-030	Sensitivity of Nordmann Doret Poired (NDP) test in screening extended spectrum β -lactamase producing <i>Klebsiella pneumoniae</i> Ni Luh Putu Siska Kahari Sari, Umi S. Intansari, and Osman Sianipar
	A1-034	Error rate of cefotaxime and ceftazidime susceptibility test disc diffusion method in clinical isolate of <i>Escherichia coli</i> Besly Sinuhaji, Osman Sianipar, and Andaru Dahesihdewi
	A1-037	Sensitivity of Combined Disc Test (CDT) to detect extended spectrum β -Lactamase producing <i>Klebsiella pneumoniae</i> Luz Maria GBW, Usi Sukorini, and Osman Sianipar
	A1-041	Risk of mortality in bloodstream infection caused by extended-spectrum β -Lactamase producing <i>K. pneumoniae</i> / <i>E. coli</i> Osman Sianipar, Widya Asmara, Iwan Dwiprahasto, and Budi Mulyono
	A1-050	The effect of soursop leaf extract against attachment of bacteria <i>S. mutans</i> ATCC 35668 on hydroxyapatite discs Friska Ani Rahman, Tetiana Haniastuti, and Trianna Wahyu Utami
	A1-063	Biomolecular aspect of apoptosis pathway: Caspase-8 and Caspase-9 on polifenol exposure of <i>Phaleria macrocarpa</i> (Scheff.) Boerl. on mice balb/c Theophilus Wilhelmus Watuguly
	A1-070	The potential of meropenem and piperacillin-tazobactam combination to <i>Acinetobacter spp</i> clinical isolates in vitro A. Diani, E. Arguni, and Ludhang P. Rizki

POSTER PESENTATION I

BALLROOM

Time	Code	Title and Authors
13:00 – 14:00	A1-100	Environmental factors related to acute rheumatic fever and rheumatic heart diseases in Aceh Province Herlina D. and Sofia
	B1-021	The potency of extract clove leaf (<i>Syzygium aromaticum</i>) as aphrodisiac on male mice balb/c Syahran Wael, Tri Rini Nuringtyas, Nastiti Wijayanti, and Pudji Astuti
	B1-158	Characterization of coffee peel pectin – hydroxyapatite nanocomposite for biomedical application Iga Putri Imansari, F.W. Adhiyaksa, I.P.S.A. Kusumadewa, K. Amarta, D.W.A. Fatmawati, and B. Kusumawardani
	B1-159	Suppression of inducible nitric oxide synthase by coffee peel pectin in Lipopolysaccharide-stimulated human peripheral blood mononuclear cells Hanifah Nailul Amania, T.J. Pratami, R.I. Winarno, A.D. Aprilia, N.A. Rosa, and B. Kusumawardani
	B1-160	Characterization of coffee peel pectin hydrogel for biomedical application Aisha Rahma Fairuz, M.I. Kamali, S. Wibawa, K.A. Rini, and B. Kusumawardani
	B1-183	Brief report: mutational spectrum of Thalassemia and Hemoglobin E in Province of Central Java and D.I. Yogyakarta, Indonesia N. Husna, N.I. Hidayati, R.A. Ghifari, L. Widyawati, F.N. Irfani, R. Purwanto, N.A. Suraya, Priyambodo, M. Jannah, and N.S.H. Handayani
	B1-079	The analysis cell damages/disturbances of liver and kidney among alcoholic in Yogyakarta, Indonesia Suhartini, Hendro Widagdo, Yudha Nurhantari, and Idha A. Wira Agn
	B1-066	Robusta coffee consumption induce longer heart rate recovery among medical students Denny Agustiningsih, Edwin Sukmadja, and Achmad Djunaidi

POSTER PESENTATION I

BALLROOM

Time	Code	Title and Authors
13:00 – 14:00	B1-091	Genetic polymorphisms of Uncoupling Protein 2 (UCP2) are risk factors of obesity among male and female adults in Yogyakarta, Indonesia Harry Nugroho Eko S., Ahmad Hamim Sadewa, and Pramudji Hastuti
	B1-027	Frequency effect of sodium askorbat application 35% on shear strength of composite resin restoration at dentin post bleaching with hydrogen peroxide 35% Tunjung Nugraheni, Nuryono, Siti Sunarintyas, and Ema Mulyawati
	D1-035	AMOBA application of mother and baby as maternal education during pregnancy up to two years old Shyfany Krismarestuti, Yuni Rahmawati, Abidurrahman Alfaruq, Ana Amirotn Solihah, Rizky Puspa Dewi, and Savitri Citra Budi
	D1-038	The quality of the infectious and non-infectious patient data from electronic medical record at primary health centers in Kulon Progo Laili Rahmatul Ilmi, Wahyudi Istiono, and Lutfan Lazuardi
	D1-076	Improvement of the completeness outpatient form after new form implementation Anisatul 'Afifah, Fatmah, and Savitri Citra Budi
	D1-082	Validity and reliability of instrument to measure clinical indicator of nursing diagnosis: fatigue on patient undertaking hemodialysis Atika Dwi Astuti, Sri Mulyani, and Intansari Nurjannah
	D1-083	Relationship between mother's marital age and postpartum depression: an analytic study at Yogyakarta A.D. Basfiansa
	D1-109	A mixed-method study on the influence of hygiene training intervention on santris' hygienic practices at Mawar Islamic Boarding School, Yogyakarta Vita Widyasari, Yayi Suryo Prabandari, and Adi Utarini

POSTER PESENTATION I

BALLROOM

Time	Code	Title and Authors
13:00 – 14:00	D1-117	Epidemiology of characteristics and presentation of pediatric dengue cases in Surabaya Amrina Rosyada, Sulistiawati, Dominicus Husada, and Jusak Nugraha
	D1-121	Indonesian version of Shorthened General Comfort Questionnaire (SGCQ): validity and reliability Eria Riski Artanti, Subroto, and Intansari Nurjannah

ORAL PRESENTATION I
HIBISCUS ROOM

Time	Code	Title and Authors
15:30 – 15:45	H1-024	Elimination of soil-transmitted helminth infection in Bangladesh: knowledge, attitudes, and practices regarding mass drug administration T.C. Nath, R.S. Padmawati, M.S. Alam, and E.H. Murhandarwati
15:45 – 16:00	H1-068	Therapeutic potential of Lemuru fish (<i>Sardinella longiceps</i>) oil in mice with osteoarthritis of temporomandibular joint D.M.C. Robin, Suhartini, and Y. Corvianindya
16:00 – 16:15	H1-156	Validation of Google Trends with dengue surveillance data in Yogyakarta Province Atina Husnayain, Felix Fridom Mailoa, Katrina Feby Lestari, Lastdes Cristiany Friday, Agung Nugroho, Ahmad Watsiq Maula, Setyarini Hestu Lestari, and Anis Fuad
16:15 – 16:30	H1-094	The SLCO1B1*15 haplotype associated with reduced rifampin concentrations in Indonesian pulmonary tuberculosis patients: implications for increasing dosage regimen Sunarto Ang, Akhmad Kharis Nugroho, Ahmad Hamim Sadewa, Yoke-Lin Lo, Lukman Hakim, and Mustofa
16:30 – 16:45	H1-103	Efficacy of Hepatitis B Vaccination among Children in Special Region of Yogyakarta, Indonesia: evaluation of humoral and cellular immunity C. Pronocitro, N.S. Mulyani , B. Ardianto , A.A. Ghufron, Y.H. Hazazi, and D.S. Heriyanto
16:45 – 17:00	H1-092	Identification of characteristics subject as risk factors of Nevirapine Allergy in Indonesian HIV A.S.R. Pudjiati, H. Soebono, I. Dwiprahasto, and Z. Djoerban

ORAL PRESENTATION I

LOTUS ROOM

Time	Code	Title and Authors
15:30 – 15:45	L1-110	Correlation of nutritional status and behavior with Hookworm and <i>Strongyloides stercoralis</i> infection in children under five years in Kokar Public Health Center, Alor Regency Benaya Yamin, Indra E. Lalangpuling, Mahardika D.W., and Elsa Herdiana
15:45 – 16:00	L1-118	Combination effect of Temugiring (<i>Curcuma heyneana</i> Val.) and Meniran (<i>Phyllanthus niruri</i> L.) on hematology and biochemical blood profile of layer chicken vaccinated Avian Influenza S. Hartati, T. Untari , B. Sutrisno, I. Fitriana, and A. Nururrozi
16:00 – 16:15	L1-129	Characterization of indigenous bacteria of <i>Aedes aegypti</i> and its inhibitory activity against larvae of <i>Aedes aegypti</i> Arum Sari, Farhatush Shoalihat, and A. Endang Sutariningsih Soetarto
16:15 – 16:30	L1-133	Evaluation of household's knowledge, attitude, practice on water processing and diarrhea prevalence in community Sofia, Herlina D., and Nungki S.P.
16:30 – 16:45	L1-188	Forecast analysis tuberculosis incidence based on data code of ICD 10 in Yogyakarta Regional Hospital Rita Dian Pratiwi
16:45 – 17:00	L1-180	Accuracy of mean platelet volume and platelet distribution width for diagnosis of acute appendicitis Andi Lestiono, Supangat, Gunadi, and Akhmad Makhmudi

ORAL PRESENTATION I
SUNFLOWER ROOM

Time	Code	Title and Authors
15:30 – 15:45	S1-016	The effect of Gamat Emas collagen with local hydroxyapatite as bone substitute material toward osteoblast for immediate denture treatment Endang Wahyuningtyas
15:45 – 16:00	S1-031	Nano sisal dental composite: flexural strength with different filler volume Dwi Aji Nugroho, Widjijono, Nuryono, Widya Asmara, Wijayanti D.A., Mona Safarina, and Ardianata D
16:00 – 16:15	S1-077	Non surgical iatrogenic perforation repair using mineral trioxide aggregate and direct restoration with fiber post on central maxillary incisor H. A. Pribadi and Yulita Kristanti
16:15 – 16:30	S1-081	The effect of collagen activation on platelet rich plasma to fibroblasts proliferation of periodontal ligament Pati Tangsupati and Kwartarini Murdiastuti
16:30 – 16:45	S1-140	The effect of Calcium Phosphopeptide Amorphous Calcium Phosphate (CPP-ACP) and Calcium Phosphopeptide Amorphous Calcium FluoroPhosphate (CPP-ACFP) on glucosyltransferase activity Y. Kristanti, S. Sunarintyas, W. Asmara, and J. Handajani
16:45 – 17:00	S1-051	The effectiveness of clinical practice guidelines implementation in reducing complications of impacted lower third molar odontectomy Dibyo Pramono, Iwan Dwiprahasto, and Hari Kusnanto

ORAL PRESENTATION I
IRISH ROOM

Time	Code	Title and Authors
15:30 – 15:45	I1-045	Degradation profile of synthetic coral scaffold in cell culture media E.S. Mahanani and D.R. Lestari
15:45 – 16:00	I1-101	Chemopreventive activities of ‘Woja laka’ black rice bran fractions on liver carcinoma Hep G2 cells Rizal Maarif Rukmana, Nyoman Puniawati Soesilo, Rumiyati, and Rarastoeti Pratiwi
16:00 – 16:15	I1-053	Non infectious risk factors in pediatric sensorineural hearing loss Bambang Udji Djoko Rianto and Anggoro Eka Raditya
16:15 – 16:30	I1-096	Urinary tract infection in Premature Rupture of Membrane (PROM): a university hospital based study Muhammad Nurhadi Rahman, V. Meta Widya Paramita, Rivaldi D. Liligoly, and Nuring Pangastuti
16:30 – 16:45	I1-111	The topical application effect of garlic gel on the density of collagen in the wound healing process of white wistar rat gingiva I. Bramanti, I.S.R. Sudarso, M.S.H. Wahyuni, T. Wibawa, A. Alfasia, and B.A. Aji

Conference schedules

Saturday, 19 August 2017

Time	Program	Venue
08:00 – 08:30	Registration	Ballroom lobby
NEGLECTED INFECTIOUS DISEASE AND SEXUALLY TRANSMITTED DISEASE (STD) SYMPOSIUM		
08:30 – 08:50	Neglected infectious disease: lesson learned from Leprosy Prof. Dr. dr. Hardiyanto Soebono, Sp.KK(K) Universitas Gadjah Mada, Indonesia	Ballroom
08:50 – 09:10	Management of oral manifestation drg. Goeno Soebagyo, Sp.O.Path. Universitas Gadjah Mada, Indonesia	Ballroom
09:10 – 09:30	Mediating effects of social supports on depression and quality life among HIV patient Prof. Nai-Ying Ko, Ph.D. National Cheng-Kung University, Taiwan	Ballroom
09:30 – 09:45	DISCUSSION	Ballroom
09:45 – 10:00	COFFEE BREAK	Ballroom
DRUG RESISTANCE SYMPOSIUM		
10:00 – 10:20	Carbapenese drug resistance Prof. Jeannette Teo, Ph.D. National University of Singapore, Singapore	Ballroom
10:20 – 10:40	Development of new antibiotic Dr.rer.nat. Triana Hertiani, M.Si., Apt. Universitas Gadjah Mada, Indonesia	Ballroom
10:40 – 11:00	Challenge in antibiotic resistance Prof. dr. Iwan Dwiprahasto, M.Med.Sc. Universitas Gadjah Mada, Indonesia	Ballroom
11:00 – 11:15	DISCUSSION	Ballroom

11:15 – 12:15	POSTER PRESENTATION II	Ballroom
12:15 – 13:15	LUNCH AND PRAYER	Ballroom lobby
TECHNOLOGY RELATED INFECTIOUS DISEASE SYMPOSIUM		
13:15 – 13:35	Malaria detection Dr. Anto Satrio Nugroho BPPI, Indonesia	Ballroom
13:35 – 13:55	Nano-vaccine Dr.rer.nat. Ronny Martien, M.Si. Universitas Gadjah Mada, Indonesia	Ballroom
13:55 – 14:15	The use of 2-methacryloyloxyethyl phosphorylcholine polymer in prevention of periodontal diseases Dr. Hiromichi Yumoto Tokushima University, Japan	Ballroom
14:15 – 14:30	DISCUSSION	Ballroom
14:30 – 15:45	ORAL PRESENTATION II	Parallel rooms
15:45 – 16:15	COFFEE BREAK	Front of Parallel rooms
CLOSING CEREMONY		
16:15 – 16:45	BEST ORAL AND POSTER ANNOUNCEMENT	Ballroom
	PHOTO SESSION	Ballroom
	Widodo, S.P., M.Sc., Ph.D. Head of Badan Penerbit dan Publikasi UGM	Ballroom
	drg. Ika Dewi Ana, Ph.D. Vice Rector for Research and Community Services UGM	Ballroom

POSTER PRESENTATION II

BALLROOM

Time	Code	Title and Authors
11:15 – 12:15	A2-105	Increased hand hygiene compliance, impact on hospital acquired infection and patients' clinical outcome at tertiary care hospital A. Dahesihdewi, I. Dwiprahasto, S. Wimbarti, and B. Mulyono
	A2-108	The diversity of flies (Diptera: Cyclorrhapha) and its microbial pathogens collected from some public hospitals in Yogyakarta Province Budiyanti Mulyaningsih, Titik Nuryastuti, and Sitti Rahmah Umniyati
	A2-114	Comparison of blood group based on bleeding manifestation in pediatric dengue cases Amrina Rosyada, Sulistiawati , Dominicus Husada, and Jusak Nugraha
	A2-141	High expression of FcγII (CD32) receptor on monocytes in Dengue infected patients Umi S. Intansari, Harina Salim, Usi Sukorini, and Mohammad Juffrie
	A2-142	Crusted (Norwegian) Scabies Flandiana Yogianti and Hardyanto Soebono
	A2-157	Sensitivity of ChromID® ESBL to detect a clinical isolate of extended spectrum β- Lactamases producing <i>Klebsiella pneumoniae</i> Emy Noerwidayati, Osman Sianipar, and Andaru Dahesihdewi
	A2-184	The life cycle of <i>Aedes aegypti</i> larvae in the domestic sewage channel Martini, Yuniar Triasputri, Retno Hestiningsih, Sri Yuliawati, and Susiana Purwantisasi
	A2-175	Association between SCUBE1 and tissue factor in Dengue Virus Coyzaudheyuanda, Hirowati Ali, and Ellyza Nasrul

POSTER PRESENTATION II

BALLROOM

Time	Code	Title and Authors
11:15 – 12:15	A2-039	<p>Antimicrobial activity of <i>Ficus benjamina</i> L. extracts as solution for preventing methicillin-resistant <i>Staphylococcus aureus</i> activity using the Kirby-Bauer disk diffusion method</p> <p>Nungki Fatimatuzzahra, Fattah Nugroho, Annisa Yulitasari Ichwani, Rifda Latifa, Adam Darsono, and Siti Isrina Oktavia Salasia</p>
	A2-086	<p>Mucocutaneous manifestation and the correlation with clinical staging of HIV infection in Sardjito Hospital, Yogyakarta, Indonesia</p> <p>A.A. Nugraha, N. Rusetiyanti, and A.S.R. Pudjiati</p>
	C2-084	<p>Profile pharmacokinetics DHA is association with the ABO blood group of Falciparum malaria non complications in Halmahera indonesia</p> <p>Arend L. Mapanawang, Mustofa, Lukman Hakim, Mahardika Wijayanti, and Rina Handayani</p>
	C2-119	<p>Characteristics of the patient, cost of illness analysis and cost ina CBG's disease ischemic stroke in private RS Yogyakarta</p> <p>Muslimah, Tri Murti Andayani, Rizaldy Pinzon, and Dwi Endarti</p>
	C2-124	<p>Effect of albumin levels on severity of taxanes induced peripheral neuropathy in breast cancer</p> <p>Yudiyanta, Samekto Wibowo, and Nur Cahyani Setiawati</p>
	C2-132	<p>Abnormal electroencephalography as predictor of mortality in meningoencephalitis</p> <p>Whisnu Nalendra Tama, Ahmad Asmedi, and Sekar Satiti</p>
	C2-147	<p>Clinical effectiveness of zoledronic acid in premenopausal early breast cancer with hormone receptor positive: a systematic review</p> <p>Fef Rukminingsih, Tri Murti Andayani, Fita Rahmawati, and Kartika Widayati</p>

POSTER PRESENTATION II

BALLROOM

Time	Code	Title and Authors
11:15 – 12:15	C2-152	Toxic epidermal necrolysis: a case report in 9-year old girl Nurwestu Rusetiyanti, V.S. Damayanti, R. Rakhamayunita, and Sugiarshih
	C2-153	Stunting's prevalence and risk factor in infant at Cokrodirjan and Ratmakan's integrated health pos, Yogyakarta City Fuad Dheni Musthofa, Arta Farmawati, and M. Lutfan Lazuardi
	C2-177	Oral squamous cell carcinoma infected with HPV genotype 16 and 18: a retrospective clinicopathologic study in Yogyakarta, Indonesia Isadora Gracia, Supriatno, Indwiani Astuti, Dibyo Pramono, Didik Setyo Heriyanto, and Totok Utoro
	C2-178	Rhabdoid amelanotic melanoma of gingiva: histological challenge of an unusual variants of malignant melanoma Yosinta Snak, Hanggoro Tri Rinonce, Didik Setyo Heriyanto, Ahmad Ghozali, and Harijadi
	C2-181	Prognostic factors of histopathological findings for liver cirrhosis in biliary atresia patients following Kasai procedure Dian Nirmala Sirait, Leila Rakhma Budiarti, Akhmad Makhmudi, Hanggoro Tri Rinonce, and Gunadi
	D2-128	Relationship between environmental sanitation and personal hygiene with incidence of intestinal helminth infections among children under five years old in Kampung Cokrodirjan and Ratmakan Fiko Ryantono, M. Lutfan Lazuardi, and Arta Farmawati
	D2-131	The overview of health promoting schools-primary schools implementation in Yogyakarta City Darmawan Y. and Mulyani S.

POSTER PRESENTATION II

BALLROOM

Time	Code	Title and Authors
11:15 – 12:15	D2-136	Development of intention measurement tool to prevent needle stick injury in hospital Ketut Ima Ismara, Adiheru Husodo, Yayi Suryo Prabandari, and Widodo Hariyono
	D2-138	Internalization process for a sustainable rational use of medicine (RUM) policy implementation H. Sunartono, Y.S. Prabandari, H. Kusnanto, and S. Suryawati
	D2-189	Determinants of public health center staffs attitude in Bantul District Yogyakarta Special Region toward public health center as 100% smoke free area year 2012 Rosalia Kurniawati Harisaputra, Y.S. Prabandari, and C. Indriani
	D2-123	Developing instrument for estimation of Willingness-To-Pay Per Quality-Adjusted Life Year (WTP per QALY) as cost-effectiveness threshold in Indonesia D. Endarti, T.M. Andayani, S.A. Kristina, and M.R. Rokhman
	D2-164	Posyandu Remaja as community-based health screening for adolescent in MAN 2 Bantul, Yogyakarta D. Yulianda, W. Aprilia, D. L. Ramdany, I. Sholika, F. A. Irsyad, and H. Ismangoen
	D2-134	Eating breakfast had association with technical skills of Vocational High School Students I.R. Palupi, N. Handayani, and M.D. Jamil
	D2-113	A literature review on cost-effectiveness of dual antiplatelet therapy with prasugrel versus clopidogrel in patient of acute coronary syndromes Wisnu Wardono, Tri Murti Andayani, Fita Rahmawati, and Nahar Taufiq

ORAL PRESENTATION II
HIBISCUS ROOM

Time	Code	Title and Authors
14:30 – 14:45	H2-144	Association between Malaria infections and air temperature at Kulon Progo District, Yogyakarta Nilasari and Lutfan Lazuardi
14:45 – 15:00	H2-146	Is it true air humidity relating to the case of dengue in the Kendari City? Resti Sri Wulandari, and Lutfan Lazuardi
15:00 – 15:15	H2-088	Preliminary study of Nontuberculous mycobacteria (NTM): its biofilm formation, sliding motility, and antibiotic susceptibility pattern Titik Nuryastuti, Ning Rintiswati, and Praseno
15:15 – 15:30	H2-176	Up-regulation of SCUBE1 in Dengue Virus infection H. Ali, C. Prana, and E. Nasrul

ORAL PRESENTATION II

LOTUS ROOM

Time	Code	Title and Authors
14:30 – 14:45	L2-095	The Toxoplasma Rubella Cytomegalovirus Herpes (TORCH) infection risk factor of sensoryneural hearing loss in children Bambang Udji Djoko Rianto, Bondan Herwindo, and Ashadi Prasetyo
14:45 – 15:00	L2-087	Management of misaligned crown fracture with external root resorption using Mineral Trioxide Aggregate (MTA) and custom cast post and core restoration Rebecca Azary Kuncoro, and Yulita Kristanti
15:00 – 15:15	L2-098	The utilization of Voluntary Conseling and Testing (VCT) clinic on Man who have Sex with Man (MSM) Dewi Rokhmah, Oedojo Soedirham, and Wiwin Hendriyani
15:15 – 15:30	L2-120	Detection of polymorphism on voltage-gated sodium channel gene of Indonesian <i>Aedes aegypti</i> associated with resistance to pyrethroids Budi Mulyaningsih, Sitti Rahmah Umniyati, Tri Baskoro Tunggul Satoto, Tridjoko Hadianto, Ernaningsih, and Dwi A.A. Nugrahaningsih

ORAL PRESENTATION II
SUNFLOWER ROOM

Time	Code	Title and Authors
14:30 – 14:45	S2-043	The correlation between occurrence of dental caries and oral health-related quality of life of elderly population in Daerah Istimewa Yogyakarta D. Agustina, L. Hanindriyo, E. Widita, and R. Widyaningrum
14:45 – 15:00	S2-149	Indonesian Dengue research in Pubmed: bibliometric analysis Ahmad Watsiq Maula, Anis Fuad, and Adi Utarini
15:00 – 15:15	S2-122	Pain characteristics on patient undertaking hemodialysis Fatin Hapsah Afifah, Eri Yanuar Ahmad Budi Sunaryo, and Intansari Nurjannah
15:15 – 15:30	S2-054	The correlation between length of work and nasal mucociliary transport time of gas station workers Bambang Udji Djoko Rianto, Didit Yudhanto, and Camelia Herdini

ORAL PRESENTATION II
IRISH ROOM

Time	Code	Title and Authors
14:30 – 14:45	I2-104	The DD genotype angiotensin converting enzyme gene polymorphism is correlated associated with low muscle mass of elderly people in Jakarta M.D.N. Handayani, A.H. Sadewa, A. Farmawati, and W. Rochmah
14:45 – 15:00	I2-187	The effects of Lipopolisaccharide-induced periodontal disease on the pulmonary lymphocytes of the rat's model A.L. Jonarta, H. Yumoto, I. Astuti, W. Asmara, and R.T.C. Tandelilin
15:00 – 15:15	I2-075	Axon morphology improvement of sciatic nerve after 6-shogaol treatment in mice with painful diabetic neuropathy F.A. Fajrin, A.E. Nugroho, R. Susilowati, and A. Nurrochmad
15:15 – 15:30	I2-025	The effect of diode laser intensity modulation to the photoacoustic image of oral soft tissue R. Widyaningrum, R.S. Gracea, D. Agustina, M. Mudjosemedi, and Mitrayana

ABSTRACTS



SPEAKERS



A collaborative translational research among academia, industry, government, and community: a case study of Rotavirus Vaccine development

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Globally, diarrhea is the second highest cause of death in children under 5 years of age (U5) with rotavirus as the most common pathogen causing acute diarrhea. In Indonesia, rotavirus contributed to 60% and 41% of inpatient and outpatient diarrhea cases in U5. This is the highest among other countries in the world. However, evidences also show that rotavirus prevalence is high in developing as well as developed countries. Is improvement of hygiene and sanitation only adequate to prevent this infection? Otherwise, is rotavirus vaccine the most effective way to prevent it?

The World Health Organization (WHO) recommends the inclusion of rotavirus vaccine into National Immunization Program (NIP) worldwide to control vaccine preventable diseases including rotavirus diarrhea. The disease burden itself is high and the evidences on the importance of rotavirus vaccines are available in Indonesia, nonetheless not all countries, including Indonesia ,though rotavirus vaccine has been introduced, include it in their NIP. Indonesia is the only country in South East Asia Region currently developing its own rotavirus vaccine by its national leading vaccine manufactory, Biofarma, in collaboration with Murdoch Children Research Institute, Australia.

There is an inevitable need to understand the perspective of different stakeholders, as well as their acceptance to rotavirus vaccine. It is compulsory for us as scientists/clinicians to provide scientific information to our stakeholders before policy making. Beside stakeholders, we also need to understand the knowledge and attitude of hospital and community health care providers, as well as the community itself, towards rotavirus diarrhea and its vaccine. By identifying the knowledge gap, we could increase the level of advocacy to increase their knowledge on rotavirus diarrhea and its vaccine. To elaborate all of this, we generated both quantitative and qualitative studies to provide evidence for vaccine acceptance and its implementation.

This is a lesson learnt from our translational studies on rotavirus vaccine development. We understand that in developing a new drug or vaccine, it is very important to answer every single question, starting from the scientific discovery to its implementation in clinical and community settings that will enable us to measure the public health impacts, such as in post-marketing surveillance.

Implementing translational research is still quite challenging for most researchers and even for institutions. We need to understand well the philosophy of this kind of research, identify the bottlenecks and tackle the challenges. The challenges such as cultural differences between basic scientists and clinicians, lack of resources, complex regulatory mechanism, anti-vaccine movement, and flaw in science will be discussed further during the presentation.

By implementing translational research, we can establish a strong interdisciplinary collaboration between Academia, Industry, Government, and Community in answering patients and public health needs.

In such a wide-scope collaborative research, it is necessary to consider a new tolerance on transdisciplinary attitude.

Research strategy to support tuberculosis elimination in Indonesia

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Despite a number of important advances made to control Tuberculosis (TB) in the past decade, TB remains the top infectious disease killer alongside with HIV/AIDS. The new WHO End TB Strategy, serves as a blueprint for countries to end TB as a public health threat by 2030. Research and innovation is one of the three essential pillars of the End TB strategy. Indonesia is currently ranked second in the world among countries with the highest TB burden. Thus, to end the global TB epidemic, there is a critical need to increase TB research and innovation in Indonesia. Such effort need to be guided by a research strategy.

To formulate a strategy for TB research in Indonesia based on bibliographic trends and knowledge structure of TB publications at national, regional and global level.

Bibliographic data have been collected from Pubmed filtered by Indonesia country affiliation. Annual growth rate of publication has been measured and compared with countries in the Southeast Asian Region. Network analysis has been used to visualize trends in TB research collaboration and emerging research issues. Results of this bibliometric analysis and subsequent TB research strategy recommendations will be presented at the International Conference on Health Sciences 2017.

Keywords: bibliometric, Indonesia, network analysis, research, strategy, tuberculosis

Emerging virus detection program at the Eijkman Institute, Indonesia

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Indonesia has been identified as a high-risk area for emerging pathogens. Currently diagnostic capacity for most viruses is limited and it is likely that many more pathogenic species are endemic than previously known in the Indonesian region. The emerging research program at the Emerging Virus Research Unit – Eijkman (EVRU) is the first of its kind to provide critical insight into the prevalence of the spectrum of viruses in Indonesia. By testing samples for arboviral as well as non vector-borne pathogens will build local capacity to work safely with biological agents and strengthen biosecurity within Southeast Asia. There is a critical need for Indonesia to build diagnostic capacity to contribute to regional networks on emerging viruses.

The development of EVRU has already begun to advance translation into practice. EVRU has been involved in conducting studies to find viral etiologies of acute febrile illness in Indonesia over the past 5 years using traditional and cutting edge approaches. Members are now fully competent in virus isolation, molecular, and serological detection methodologies. EVRU also hosts training courses on arboviral diagnostics as well as next generation sequencing for laboratorians and researchers at Eijkman and the fever study sites. The expanded testing capacity generated by these activities should ultimately increase public health potential across the country, especially by supporting the national reference laboratory for emerging pathogen surveillance.

Avian influenza vaccine development

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Influenza viruses are enveloped, negative-strand RNA virus with segmented genomes, containing 7-8 segments. There are 4 types of influenza viruses: type A, type B, type C and type D. They differ in antigenicity, host range and pathogenicity. They are likely to have diverged evolutionary stages. From the epidemiological point of view it is type A influenza virus that is the most important for human health, because virus of this type has a wide range of host, ranging from avian species to mammals, including human. Avian influenza virus is also belong to this type, that is why an outbreak of avian influenza has a potency to create influenza pandemic. Vaccination is one of the methods for controlling and eradication of avian influenza. Many vaccines have been developed ranging from conventional to modern vaccines. Development of modern vaccine mainly based on recombinant DNA technology, including recombinant vaccine, vectored vaccine, and reversed genetic vaccines. Development and regulation of avian influenza vaccines will be reviewed here.

Integrated therapy for HIV and tuberculosis

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Tuberculosis (TB) is still the most common opportunistic infection and cause of death in HIV-infected patients, especially in resource-limited settings. Clinical manifestations of TB vary and depend on the degree of immunodeficiency. Culture with drug-susceptibility testing is recommended as a standard method for diagnosing active TB although molecular testing have become more available and reliable. TB-related mortality in HIV-infected patients is still high during the first few months of treatment. Integrated therapy of both HIV and TB is feasible and efficient to control the diseases and yield better survival. Randomized clinical trials have shown that early initiation of antiretroviral therapy (ART) improves survival of HIV-infected patients with TB. A delay in initiating ART is common among patients referred from TB to HIV separate clinics and this delay may be associated with increased mortality risk. Integration of care for both HIV and TB using a single facility and a single healthcare provider to deliver care for both diseases is a successful model. For TB treatment, HIV-infected patients should receive at least the same regimens and duration of TB treatment as HIV-uninfected patients. Currently, a 2-month initial intensive phase of isoniazid, rifampin, pyrazinamide, and ethambutol, followed by 4-month continuation phase of isoniazid and rifampin is considered as standard treatment of drug-susceptible TB. ART should be initiated in all HIV-infected patients with TB, irrespective of CD4 count. The optimal timing to initiate ART is within the first 8 weeks of starting anti-TB treatment and within the first 2 weeks for patients who have CD4 counts <50 cells/mm³. Non-nucleoside reverse transcriptase inhibitor (NNRTI)-based ART remains first-line regimen for HIV-infected patients with TB in resource-limited settings. Although a standard dose of both efavirenz and nevirapine can be used, efavirenz is preferred because of more favorable treatment outcomes. In the settings where raltegravir is accessible, doubling the dose to 800 mg twice daily is recommended. Adverse reactions to either anti-TB or antiretroviral drugs, as well as immune reconstitution inflammatory syndrome, are common in patients receiving integrated therapy. Early recognition and appropriate management of these consequences can reinforce the successful integrated therapy in HIV-infected patients with TB.

Eliminate Dengue Project – Yogyakarta: use of *Wolbachia Aedes aegypti* for dengue control

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Mosquito vector-borne diseases as dengue are one among the leading causes of high mortality and morbidity throughout the world. Till date, neither effective vaccines nor specific treatment are available against dengue infection. Hence, dengue prevention and control efforts have not seen much success in reducing transmission of the disease. This condition resulted in the need for alternative dengue control strategies. *Wolbachia*, an endosymbiont of arthropod vectors is being explored as a novel and very promising method.

The Eliminate Dengue Program (EDP) develops a natural approach to reduce transmission of dengue infection by using *Wolbachia*. The studies done recently showed that *Wolbachia* could prevent dengue virus transmission in mosquitoes without significant fitness costs. By introducing *Wolbachia* into *Aedes aegypti*, this method demonstrates increasing arthropod's resistance to arboviruses in the laboratory and have been conducting open trials with dengue-affected communities limited locations near Cairns in north Queensland, Australia since 2011.

Eliminate Dengue Project – Yogyakarta (EDP Yogya) have been conducting the journey of laboratory studies since the end of 2011. *Wolbachia-Aedes aegypti* had been introduced in natural mosquito population in limited areas in Sleman and Bantul Districts of Yogyakarta. The wMel strain successfully invaded natural populations, infecting nearly 100 % of the local population even after three years since the first release. The local established *Wolbachia Aedes aegypti* also still have shown the blocking capability of dengue virus replication. A cluster randomized trial study design is now undertaking in Yogyakarta City to prove epidemiological impact of *Wolbachia Aedes aegypti* in reducing the incidence of dengue infection.

Mapping the burden of malaria across the archipelago of Indonesia: the use of molecular tools

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Efforts to control malaria is currently hindered by the rapid emergence of parasite resistance to antimalarial drugs, mosquito resistance to insecticides and the failure to develop a suitable malaria vaccine. Artemisinin-based combination therapy (ACT) was recommended by WHO for uncomplicated malaria since 2000. The emergence of artemisinin-resistant parasite in 2009 posed a grave concern as it will render no alternative treatments for malaria.

Since 2009, we conducted therapeutic efficacy studies (TES) to monitor the effect of ACTs in 10 sentinel sites in Indonesia and the existence of SNPs in the K-13 gene among the *P. falciparum* isolates. The susceptibility of the mosquito vectors were also assayed and the existence of the resistant alleles associated with insecticide resistance to pyrethroids and organophosphate were also screened. The results revealed that the burden of malaria is still high in Papua, Sumba and North Sulawesi. No delay in the parasite clearance was observed following Dihydroartemisinin-Piperaquine (DHP) treatment, the first line drug for uncomplicated malaria. Late treatment failures were observed in days 28-42, in 4 sites, Lampung, Southwest Sumba, Flores and Minahasa Tenggara (North Sulawesi). We also did not find any SNPs of the K13 gene in any of the *P. falciparum* isolates examined. In conclusion, TES studies in Indonesia revealed no artemisinin-resistant parasites were found. Late treatment failures that may associated with the partner drug, piperaquine, have been found. The findings indicate that DHP has selected for drug-resistant parasite in several areas of Indonesia. The use of other ACT should be anticipated to delay or prevent the resistance to DHP

The insecticide resistance analysis revealed the existence of the kdr alleles among the anopheles vectors in Lampung and Sumba. Further analysis will be performed to determine the dominant allele(s) that may be responsible for the insecticide resistance in Indonesia.

Keywords: Plasmodium, dihydroartemisinin+piperaquine, insecticide resistance, kdr alleles, K-13 gene SNPs

The emergence of antibiotic resistance in mutation

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Antibiotic resistance (AMR) has become a regular feature of the clinical landscape and dealing with AMR has become a national priority in Japan. Specialists in infection and infectious disease need to take the lead in addressing this problem. To begin reducing with the incidence of AMR, we first need to understand the mechanisms by which bacteria evolve to become AMR strains. This presentation focuses on the role of mutation in AMR. In our research and clinical treatment of urinary tract infection, urogenital infection and sexually transmitted infection and their causative bacteria, we have begun to acquire some insight into how bacteria acquire antibiotic resistance. Our main research targets are *Escherichia coli*, *Pseudomonas aeruginosa*, and *Enterococcus faecalis* in the UTI field and *Neisseria gonorrhoeae* in the STI field. In UTI, new quinolones are now typically used as antimicrobial agents and there are already reports of the emergence of quinolone-resistant strains. We frequently encounter cases with treatment failure. These emergent resistant strains include *E. coli*, *P. aeruginosa*, *E. faecalis* and even other kinds of bacteria. The best-known resistance mechanisms are *gyrA* and *parC* mutations, encoding DNA gyrase and topoisomerase IV respectively. In STI, several strains of *N. gonorrhoeae* show AMR, and the Center for Disease Control (CDC) in the US has named *N. gonorrhoeae* as one of 3 AMRs in need of the closest attention. *N. gonorrhoeae* quinolone resistance seems to share the same mechanism mentioned above as well as resistance to cephalosporins and azithromycin through other genes' mutations. We here summarize the data from the most current research into AMR and bacterial mutation.

Neglected infectious disease: lesson learned from Leprosy

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Leprosy is an infectious disease of man caused by *Mycobacterium leprae*, an intracellular bacilli, which may result in permanent disabilities. The leprosy elimination goal set by the World Health Organization (WHO), i.e. a global prevalence rate less than 1 patient per 10,000 population, was achieved in the year 2000, however, more than 200,000 new cases are still reported each year, particularly in India, Brazil, and Indonesia. Leprosy is a unique infection: (i) it is a chronic infection primarily affecting the skin and peripheral nerves, (ii) *M. leprae* is so far cannot be cultured *in vitro* (mainly because of its reductive genome evolution), and (iii) transmission and pathophysiological data have never been finished to study. The clinical presentations of the disease (according to Ridley-Jopling and WHO classifications) are correlated with the patient's genetic background, their immune response and the bacillary load of patients. Multidrug therapy (MDT) comprising of dapsone, rifampicin, with or without clofazimine has been recommended since 1982 as the standard treatment of leprosy; 6 months for patients with paucibacillary (PB) leprosy and 12 months for patients with multibacillary (MB) leprosy. The worldwide use of MDT in leprosy since 1980s has contributed to the drastic decline in the number of new case patients. However, resistant strains have been now emerged despite the use of this MDT, hence identifying and monitoring resistance is still necessary.

Keywords: *M. Leprae*, genetics susceptibility, leprosy, MDT, neglected infectious disease

Carbapenemase producing and polymyxin-resistant (*mcr-1*) Enterobacteriaceae – a local genomic and clinical epidemiology study

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Invasive Carbapenem-resistant Enterobacteriaceae (CRE) infections are associated with high mortality and limited therapeutic options, making these infections challenging to treat. Hence, in order to combat nasty CRE infections the use of "abandoned, older" antimicrobials such as the polymyxins have been revived into clinical practice. Unfortunately, the emergence of co-occurring polymyxin and carbapenem resistance, mediated by *mcr* (encoding polymyxin resistance) and carbapenemases is threatening to produce a rise of strains which are pan-resistant. This poses a serious threat to public health worldwide.

In this talk, the clinical, molecular and laboratory aspects of carbapenemase producing and polymyxin resistant Enterobacteriaceae obtained from ongoing local surveillance is discussed.

Different test of the average waiting time between the registration of general patient and national health assurance outpatients

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Microbial community in aqueous environment tends to attach and form a thin layer film on a surface. The thin biofilm protect the community towards its harmful environment including the presence of antibiotics and host immune system. Health problem related to biofilm formation is not only correlated to patients with medical implants but mostly to immune compromised patients as well as those suffered from cystic fibrosis. Microbial biofilm can serve as a reservoir for the microbe which has been correlated as a cause of relapse infection. Being a community of multispecies members having reduced rate of metabolism following scarce of nutrition has major cause of the resistance to most available antibiotics. Search for new potential antimicrobial agents from natural resources has directed to eradicate the microbes in their biofilm state. Researches on several Indonesian natural products both from terrestrial and marine resources have revealed enormous potential new antibiofilm agents. Several approaches can be used for selecting simple yet effective bioassays for screening method. Microdilution method followed by chemical staining is one of the most popular method which is relatively simple, cheap and reliable. This method can be apply for observation of microbial biofilm formation inhibition as well as towards preformed biofilm. Considering that biofilm is resulted from "microbial communication" or quorum sensing, disruption of the communication may resulted in biofilm formation inhibition. Several methods have been developed for this purpose, including those observe the inhibition of the quorum sensing products, i.e. pigment in *Chromobacterium violaceum* and *Pseudomonas aeruginosa*, and inhibition of microbial motilities of *P. aeruginosa*. Further, inhibition of quorum sensing molecules, farnesol, following sample application in *Candida albicans* culture, may also be used. Considering that microbial biofilm in nature consists of multispecies microorganism, the potential drug candidate should be active not only against single culture of microorganism, but wider spectrum agents is expected to play more role in eradicating microbes in their biofilm state. A combination of compound drugs having the ability to destroy the biofilm with those effective antimicrobials having low biofilm penetration ability may serve as a potential antiinfective in biofilm infection.

Keywords: antiinfective, biofilm inhibitor, natural products

Artificial intelligence for malaria diagnosis

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Advances in Artificial Intelligence (AI) fields has aroused many attentions and various AI applications are easily found in daily life. Searching information from the internet, multilingual machine translation, automatic road navigations are some AI application examples that we used in daily life. AI helps human to perform a job effectively and efficiently, and sometimes even with better result compared to those if it was done by human. This talk discusses the application of AI technology for Computer Aided Diagnosis, that assists microscopist to determine the Malaria status of a patient from peripheral blood smears microphotographs.

Malaria is an infectious tropical disease caused by unicellular protozoan parasite from the genus Plasmodium with 5 species known to infect human by entering bloodstream. Those species are Plasmodium falciparum, Plasmodium vivax, Plasmodium malariae, Plasmodium ovale, and Plasmodium knowlesi. It has been reported that malaria caused between 1.5 and 2.7 million deaths every year and, according to WHO, an amount of between US\$ 5.0 and US\$ 6.2 billion will be required per year for controlling and eliminating malaria globally during 2009 to 2015 periods.

In Indonesia, the highest prevalence of malaria is found in remote and forest related areas including Papua, Kalimantan, and Sulawesi where number of medical experts and high quality medical facilities are rarely sufficient. Furthermore, the key to overcome global health problem caused by malaria is through accurate diagnosis. Various methods are used to pronounce malaria including light microscopy, fluorescent microscopy, rapid antigen detection method, and polymerase chain reaction (PCR). Among these techniques, examining both thick and thin Giemsa stained blood smear under light microscope in order to find infecting parasites is considered to be the most sensitive and specific one. Although the use of light microscope in diagnosing malaria offers many advantages, it also has some drawbacks. The condition of blood smear is highly influenced by time and storage. Moreover, confirming negative status of malaria take considerable time and the diagnosis relies heavily on the expertise and experiences of medical practitioner in the field. These disadvantages become a burden in Mass Blood Screening (MBS) and in controlling the spread of malaria in rural area, not to mention in eastern part of Indonesia. Therefore, an automated image analysis system would improve the performance of microscopy by circumventing its main limitation in term of dependency on the ability of medical practitioner to diagnose blood image accurately,

thus providing a milestone for fast and accurate diagnosis of malaria in Indonesia remote area.

The objective of this study is to develop morpho-geometrical feature extraction algorithms of an infected red blood cells. The discriminatory features obtained from the red blood cell are presented to a Naive Bayes classifier to determine the plasmodia species and life stages. The performance of the proposed method was initially evaluated on a standard quality microphotograph dataset obtained from Eijkman Institute of Molecular Biology, and the results were promising. Further evaluation using field-quality microphotographs and large-scale dataset obtained from various area in Indonesia with high prevalence of Malaria were left as the future works of this study.

Keywords: artificial intelligence, life stage classification, malaria diagnosis, morpho-geometrical feature extraction, species classification

The use of 2-methacryloyloxyethyl phosphorylcholine polymer in prevention of periodontal diseases

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Periodontal diseases are chronic inflammatory conditions initiated by a microbial biofilm formed in the periodontal pocket and leads to destruction of the supporting tissues of the teeth and finally to tooth loss. Gingival epithelium plays important roles as the first physical barrier to bacterial invasion for maintaining its function. Gingival epithelial cells also orchestrates the local innate immune reactions against colonizing pathogens, such as *Porphyromonas gingivalis*, major periodontitis-related pathogen, via toll-like receptors (TLRs), which recognize various bacterial products, and causes periodontal inflammation. Newly developed oral care products to inhibit the initial adherence of periodontal pathogens and the subsequent innate immune reaction and protect against oral epithelial irritation by chemical irritants are expected. It has been shown that the biological properties of a coating of a biocompatible 2-methacryloyloxyethyl phosphorylcholine (MPC)-polymer include a phospholipid polar group that mimics the biomembrane and is a completely harmless to humans, and reducing protein adsorption and bacterial adhesion. We previously reported that a coating of both nonaqueous and aqueous MPC-polymers decrease bacterial adhesion on hydroxyapatite and oral epithelial cells (OEC) and suppresses biofilm formation, and attributes these effects to the “superhydrophilicity” of MPC-polymer coated surfaces, suggesting that MPC-polymer coating could be a promising tool for preventing microbial adherence to biomedical devices. Moreover, our recent clinical trial revealed that mouth-rinsing with MPC-polymer inhibited the increase of oral bacteria, especially *Streptococcus mutans*, which is a caries-related bacterium, suggesting that MPC-polymer is useful for preventing dental plaque related diseases. Regarding the possibility of MPC-polymer application for preventing the adherence of periodontal pathogen, subsequent inflammatory reaction and protection of gingival epithelium, we recently reported the effects of MPC-polymer on the adherence of *P. gingivalis* and TLR2 ligand to OEC and subsequent interleukin (IL)-8 production. Furthermore, MPC-polymer pre-treatment protected OEC from injury by chemical irritants, cetylpyridinium chloride. These findings demonstrated that MPC-polymer treatment significantly reduces the adherence of periodontal pathogen to OEC and the subsequent TLR-mediated innate immune responses, and protects OEC from chemical irritants, suggesting that MPC-polymer is potentially useful for oral

care to prevent oral infection, such as periodontal diseases, and to maintain oral epithelial function.

Keywords: anti-inflammatory effects, bacterial adherence, epithelial cells, MPC, oral care, periodontal disease

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Different test of the average waiting time between the registration of general patient and national health assurance outpatients

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Introduction. The admitting officers are the first place to be addressed by a patient or family prior to receiving health services at the hospital. The patient registration process with short waiting times will have an impact on patient satisfaction, so it is important to improve quality at the place of registration. Based on preliminary study, five patients who have registered as general patients and National Health Assurance in Regional Public Hospital of Dr. Soehadi Prijonegoro Sragen stated that waiting time of National Health Assurance patient registration is longer than general patient so that the patient is more satisfied to register as a general patient.

Aim. To conduct a different test of the average waiting time between the registration of general with BPJS outpatients in Regional Public Hospital of Dr. Soehadi Prijonegoro Sragen.

Methods. The study was the observational analytic quantitative approach. Samples were taken as many as 100 patients. Data collection technique used observation and documentation. Data were analyzed using statistical test of independent sample t-test.

Results. The average waiting time new patient registration outpatient is 182.4 seconds and old patients 109.14 seconds. There are differences in the average waiting time between the registration of new general and National Health Assurance outpatients with a significant value of $p = 9,779 \times 10^{-5}$ where the waiting time of patient registration enrollment of National Health Assurance general outpatient waiting times greater than the new general outpatient with a significant value of $p = 4,889 \times 10^{-5}$. There are differences in the average waiting time between the registration of old general and National Health Assurance outpatients with a significant value of $p = 9,377 \times 10^{-5}$, where the waiting time of patient registration enrollment old National Health Assurance outpatient waiting times greater than the old general outpatient with a significant value of $p = 4,688 \times 10^{-10}$.

Conclusion. There are differences in the average waiting time between the registration of general with National Health Assurance outpatients in Regional Public Hospital of Dr. Soehadi Prijonegoro Sragen.

Keywords: difference timeout, general patients, National Health Assurance patients, outpatient registration

Sensitivity of Nordmann Doret Poired (NDP) test to detect extended spectrum β -lactamase producing *Klebsiella pneumoniae*

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Introduction. In recent years, infection of *extended spectrum β -lactamase* produce by *Klebsiella pneumoniae* has become a worldwide problem. Most available test to detect thisinfection requires approximately 24 hours after growth of this bacteria discovered. Recently, it has been developed Nordmand Doret Poirel (NDP) test which is easy, inexpensive, and fast (takes less than an hour) to detect *extended spectrum β -lactamase* (ESBL)produce by *Klebsiella pneumonia*.

Aim. The aim of this study is to evaluate the accuracy of NDP test to detect ESBL produce by*Klebsiella pneumoniae*.

Methods. This is a diagnostic test study where NDP test was compared independently and blindly with Combined Disk Test (CDT) as a gold standard. Subject of study were clinical isolates of *Klebsiella pneumoniae* discovered from clinical samples (blood, urine, pus, sputum, feces, throat swab, endotracheal tube and drain) founded in the Clinical Laboratory of Dr. Sardjito Hospital. Data were analyzed by statistic descriptive, and determine with sensitivity, specificity, predictive values, likelihood ratio and accuracy of NDP test.

Results. Total subject of study is 37 clinical isolates of *Klebsiella pneumoniae*. The study shows 27 true positive results and 10 true negative results. The NDP test has sensitivity, specificity, positive predictive value, negative predictive value all are 100%. The likelihood ratio for positive test and for negative test respectively are 22 and 0,02.

Conclusion. The Nordmand Doret Poirel (NDP) test is a perfect test to detect ESBL producing *Klebsiella pneumoniae* in routine laboratory services.

Keywords: *Klebsiella pneumoniae*, CDT, ESBL, NDP

Error Rate of Cefotaxime and Ceftazidime Susceptibility Test Disc Diffusion Method in Clinical Isolate of *Escherichia coli*

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Introduction. The third generation of cephalosporin such as cefotaxime and ceftazidime are the drug of choice for gram negative bacteria infection. Disc diffusion is the most widely used for antimicrobial susceptibility test and still be method of choice in clinical laboratory in hospital. Method in antimicrobial susceptibility test is one of factors that may influence the test result.

Aim. To assess the accuracy of disc diffusion method in conducting antimicrobial susceptibility test of ceftazidime and cefotaxime among clinical isolates of *E. coli*.

Method. This study uses observational cross sectional design. Subject of the study is clinical isolates of *E. coli* from various specimens in Clinical Laboratory of Dr.Sardjito Hospital Yogyakarta consecutively selected. Disc diffusion method is compared to E-test in conducting antimicrobial susceptibility test of ceftazidime and cefotaxime on clinical isolates of *E. coli*. The accuracy of disc diffusion method is determined by its error.

Results. Total clinical isolates of *E. coli* is 96 isolates. The most frequent isolates are from urine specimen (67,7%), and followed by blood, pus, and feces respectively are 11.5%, 8.3%, and 7.3%. Most isolates are isolated from non-intensive care unit (85.4%). Disc diffusion method of cefotaxime susceptibility test gives result of susceptible, intermediate, and resistant respectively 47.7%, 9.3%, and 50% whereas E-test gives result 46.9%, 3.1%, and 50% respectively. On the other hand, disc diffusion method of ceftazidime gives result susceptible, intermediate, and resistant respectively 49%, 3.1% and 47.9%, while the E-test method, respectively, 50%, 8.6%, and 41.4%. Minor error cefotaxime susceptibility test of disc diffusion method is 7.3% that exactly the same with minor error that occurs in ceftazidime. In addition, ceftazidime susceptibility test shows major error 1.04%.

Conclusion. Disc diffusion method may be used in cefotaxime and ceftazidime susceptibility test on clinical isolates of *E. coli*.

Keywords: *Escherichia coli*, disc diffusion, E-test, major error, minor error

Sensitivity of Combined Disc Test (CDT) to detect extended spectrum β -lactamase producing *Klebsiella pneumoniae*

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Introduction. Detection of ESBLs is a challenge in service of the clinical laboratory medicine. ESBLs are difficult to detect because they have different levels of activity against cephalosporin, so the detection method and antimicrobial agents in the examination is very important. Research on combined disc test (CDT) has been developed, included the use antibiotic discs.

Aim. The aim of this study is to determine the sensitivity of CDT in detecting ESBL producing *Klebsiella pneumoniae*.

Methods. This is an observational cross-sectional study. Subjects are clinical isolates suspected ESBL producing *Klebsiella pneumoniae*. They are tested by both CDT and Etest. CDT is independently and blindly compared with the Etest which is used as reference standard. Data are analyzed by 2x2 table to determine sensitivity, specificity, positive and negative predictive value, as well as an accuracy.

Results. Total suspected ESBL producing *K. pneumoniae* are 53 isolates. They are mostly from blood, urine and pus respectively 17%, 17%, and 10%. Most of clinical isolates are isolated from non-intensive care unit, historically treated with third generation cephalosporine (83%), length of stay more or equal to 7 days (86,3%). Both sensitivity and specificity are 100%.

Conclusion. It can be concluded that the performance of CDT is the same as E-test in detecting ESBL producing *K. pneumoniae*.

Keywords: *Klebsiella pneumoniae*, combined disc test, ESBL, E-test

Risk of mortality in bloodstream infection caused by either *E. coli* or *K. pneumoniae* producing extended-spectrum β-lactamase

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Introduction. The prevalence of bloodstream infection caused by extended-spectrum β-lactamase (ESBL) producing *K. pneumoniae* / *E. coli* got increase worldwide. Several studies reported that it could give rise to mortality attributed-bloodstream infection, but some studies reported that this infection was not associated with mortality.

Aim. To investigate risk of mortality among those who suffer from bloodstream infection caused by either *E. coli* or *K. pneumoniae* producing ESBL.

Methods. This was a prospective cohort study that involved 72 patients suffer from bloodstream infection caused by either *E. coli* or *K. pneumoniae*. The exposed group consists of those who are infected by bacteria producing, whereas the unexposed group consisted of those who were infected by bacteria non-producing ESBL. These 2 groups were followed up prospectively for 14 days after the patient diagnosed suffered from bloodstream infection due to either *E. coli* or *K. pneumoniae*. Data collected then analyzed by statistic descriptive, Chi square test, independent t-test, survival analysis and stratification analysis.

Results. It was found that the mortality in the exposed group was 30.6% whereas in unexposed group the mortality was lesser namely 22.2%. This difference in proportion was not statistically significant ($p = 0.59$). In addition, Kaplan Meier survival analysis also showed that the survival during 14 days follow up was not significantly different between these two group ($p = 0.45$) with hazard ratio 1.41 (95% CI = 0.568 – 3.51). In stratification analysis, it was found that the risk of death among those who were inappropriately prescribed antimicrobia, and those who had sign of leukocytosis were 9.53 and 3.60 times respectively. It was moderately high even though statistically not significant.

Conclusion. In overall, risk of mortality among subjects who suffer from bloodstream infection caused by either *E. coli* or *K. pneumoniae* which produce ESBL is not differ significantly with those who are infected by the bacteria which do not produce ESBL. The risk of mortality among subjects who are infected by bacteria producing ESBL is moderately higher especially in 2 groups namely the group of subjects who are inappropriately prescribed antimicrobial as well as among those with sign of leukocytosis.

Keywords: *E. coli*, *K. pneumoniae*, bloodstream infection, ESBL, mortality

The effect of ethanol leaves extract of soursop (*Annona muricata* L.) on adhesion of *Streptococcus mutans* ATCC 35668 to hydroxyapatite discs

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Introduction. Demineralization of dental hard tissues can be caused by dental plaque. Dental plaque contains of various components, especially bacteria that attached on extracellular matrix. *Streptococcus mutans* has extracellular glucan as adhesin that important in the mechanism of attachment of the tooth surface. Natural substance can be used for preventing plaque formation by inhibit the attachment of *S. mutans*. Soursop plant has been used in treating various diseases. Leaves of the soursop (*Annona muricata* L.) as a material that potentially inhibit attachment of bacteria *S. mutans*.

Aim. The aim of this study was to evaluate the effect of the ethanol extract of *Annona muricata* L. leaves on the adhesion of *S. mutans* ATCC 35668 on hydroxyapatite discs. This was a laboratory study.

Methods. Soursop leaves were extracted by maceration method using 70% ethanol. The experiment was carried out by analyzing the effect of the extract concentration on the inhibition adhesion of *S. mutans* ATCC 35668 on hydroxyapatite discs. Concentrations of extract tested were: 150; 125; 100; 75; 50 mg/ml. Chlorhexidine 0,2% was used as a positive control while DMSO 5% was used a negative control.

Results. The data were analyzed by Oneway ANOVA. This study showed there was significant statistically differences of *S. mutans* ATCC 35668 colony count between groups ($p<0.05$).

Conclusion. The ethanol extract of soursop leaves has an effect on the number of *S. mutans* ATCC 35668 colonies which attached to hydroxyapatite discs.

Keywords: *S. mutans* ATCC 35668, adhesion, ethanol extract of soursop (*Annona muricata* L.) leaves, hydroxyapatite discs

Biomolecular aspect of apoptosis pathway: caspase-8 and caspase-9 on polifenol exposure of *Phaleria macrocarpa* (Scheff.) Boerl. on mice Balb/c

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Introduction. Polyphenols compound of *Phaleria macrocarpa* has potential as an anticancer, and expected to inhibit lung carcinogenesis.

Aim. The objective of this study is to elucidate the role of polyphenols induce apoptosis via caspase-8 and caspase-9.

Methods. Animals were randomly divided into 2 groups: Group 1: control group and Group 2: treatment group with administration of 50 mg polyphenols. The extract was administration orally. The development of lung tumors was observed with tissue surgery at week 8, 17 and 26. The expression of caspase-8 and caspase-9 were observed. Data were analyzed using Kruskal-Wallis, Mann-Whitney, oneway ANOVA, Post hoc LSD test, with a significance level of $p < \alpha$ (0.05).

Results. Adminstration of 50 mg polyphenols from *P. macrocarpa* extract, showed inhibition activity of lung carcinogenesis through increased expression of caspase-8 and caspase-9 in the treatment group at week 8, 17 and 26 ($p = 0.000$).

Conclusion. The administration of poliphenol from *P. macrocarpa* extract effectively inhibit lung carcinogenesis through increased of caspase-8 and caspase-9 in mice strain Balb/c.

Keywords: *Phaleria macrocarpa*, caspase-8, caspase 9, lung carcinogenesis, polyphenols

The potential of Meropenem and Piperacillin-Tazobactam combination to *Acinetobacter spp.* clinical isolates *in vitro*

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Introduction. *Acinetobacter spp.* is one of the most common cause of nosocomial infection especially sepsis. A lot of resistance happen to antibiotics that is used to treat *Acinetobacter*-related sepsis

Aim. To know the potentiality of meropenem and piperacillin-tazobactam combination against *Acinetobacter spp.* *in vitro* by using paper strip test

Methods. This research is using experimental method and conducted in September 2015-Desember 2015 at Microbiology Department of Medical Faculty, UGM. Clinical isolates of *Acinetobacter* that is used belongs to Microbiology Departement of Medical Faculty, UGM. The data is analyzed using post test analysis which is done by doing an observation over 24 hours after the paper strip test was applied in bacterial culture. The MIC value of antibiotic combination is recorded based on observation.

Results. Twelve of 17 clinical isolates show synergistic potential (70,59%) and 5 others show indifferent potential (29,41%). Two of five clinical isolates that show indifferent potential are *A. baumannii* and all of the clinical isolates that show synergistic potential are *Acinetobacter spp.*

Conclusion. Combination of meropenem and piperacillin-tazobactam shows more synergistic dominantly than the single use of each of them.

Keywords: *Acinetobacter spp*, Sepsis, paper strip test, meropenem, piperacillin-tazobactam

Environmental factors related to Acute Rheumatic Fever and Rheumatic Heart Diseases in Aceh Province

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Introduction. Rheumatic Heart Diseases (RHD) is the most commonly acquired heart disease in people under the age of 25 years who live in poor environmental condition. It most often begins in childhood as strep throat know Acute Rheumatic Fever (ARF).

Aim. To describe relationship between age, sex, quality of housing and duration of interaction in school environmental, to know the severity of disease, to identify valve's damage in RHD's patients, to determine ASTO results.

Methods. We evaluated new cases of ARF and RHD between period of January 2015 until May 2017 in Zainoel Abidin Hospital, Aceh Province. Total of 63 cases were analyzed. Criteria of ARF based on Jones criteria and RHD based on valve's damage using Echocardiography. Association of environmental factors and severity of disease were analyzed statistically at 0.05 level of significance and correlation coefficient were assessed by Spearman's Rank.

Results. From 63 cases, 23 (36.5%) were ARF and 40 (63.5%) were RHD. Of total cases of RHD, mitral valve's damage were founded the highest incidence. Among RHD cases, 15 (37.5%) had three valve's damage. The range ASTO values were 400 – 3200. Patients living in poor-quality of house were higher than good-quality of house. The duration of interaction in the school environment as ordered \leq 6 hours in 31 patients (49.2%), \geq 10 hours in 9 patients (14.3%) and \geq 24 hours in 23 patients (36.5%). Spearman's correlation shows that's age has moderate positive correlation and durations in school environment has weak positive correlation. Sex and quality of housing have no relationship with disease severity ($p \geq 0.05$).

Conclusion. A healthy environment plays an important role in Streptococcal infection. It is needed to educate ARF patients about secondary preventive to prevent recurrent infectious and valve's damage.

Keywords: ARF, environmental factors, RHD, valve's damage

The potency of extract clove leaf (*Syzygium aromaticum*) as Aphrodisiac on male mice Balb/C

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Introduction. The leaf of *Syzygium aromaticum* have been used indigenous medicines for the treatment of male sexual disorders in Malucas people.

Aim. The present study is aimed to investigate the effect extract of clove leaf on general mating behaviour, libido, and adverse effects on sexually normal male mice balb/c.

Methods. The cloveleafare macerated used methanol solvent pro analysis. Provision of clove leaf extract for 5 days with doses of 15 mg, 75 mg, 150 mg, and 200 mg/kg body weight in mice balb/c. The first day until 5 days done observed of behavior by mounting frequency, post mounting, and coitus used CCTV.

Results. The extracts of clove leaf were found to stimulate the mounting behaviour of male mice balb/c by dose 150 mg/kg body weight,because terpenoid compounds that act as hormone attractant and phenol and flavonoid compounds from extract clove leaf that acts as a stimulant of the occurrence of sexual behavior,although kruskal-wallis test not significantly increase their mounting frequency and coitus performance.

Conclusion. The extracts of clove leaf dose 150 mg/kg body weight enhanced the sexual behaviour of mile mice balb/c.

Keywords: aphrodisiac, extracts of clove leaf, flavonoid, phenol, sexual behaviour

Characterization of coffee peel pectin – hydroxyapatite nanocomposite for biomedical application

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Introduction. Pectin of the Robusta coffee peel is large and complex polysaccharides containing -COO⁻ groups that are prone to bind Ca²⁺ cations. This calcium cross-linking of pectin subsequently leads to profuse hydration can increase adhesion and improve regeneration of osteoblast and odontoblast.

Aim. The aim of this study was to characterize compositie and morphological features of coffee peel pectin – hydroxyapatite nanocomposite based on the chemical, the structural and morphological features.

Methods. Wet nanohydroxyapatite synthesis was mixed with pectin of the Robusta coffee peel (1.5, 3.0 and 6.0 g) then the homogeneously mixed solution was immediately taken to high energy microwave heat process. Fourier transform infrared spectroscopy (FTIR) was used to identify the functional groups and scanning electron microscope (SEM) was used to identify morphology of the synthesized composite.

Results. FTIR analysis confirmed that the COO⁻....Ca²⁺ interaction between the coffee peel pectin and hydroxyapatite. The SEM analysis showed that the presence of discrete aggregate particles with reduced size so as to have high potential for biomedical applications. Besides, coffee peel pectin – hydroxyapatite nanocomposite with concentration of 6.0 g had more Ca-O complex composition than other groups.

Conclusion. Coffee peel pectin – hydroxyapatite nanocomposite indicated that the powder could have a potential in the various of biomedical aplication, such as to improve osteointegration formation.

Keywords: coffee peel pectin, hydroxyapatite, nanocomposite

Suppression of inducible nitric oxide synthase by coffee peel pectin in lipopolysaccharide-stimulated human peripheral blood mononuclear cells

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Introduction. Pectin of the Robusta coffee peel has excellent biocompatibility in human gingival fibroblast cells. Nevertheless, the potential pectin of the Robusta coffee peel as a natural anti-inflammatory has not been explored thoroughly.

Aim. Determination of iNOS level in LPS-stimulated human-PBMC upon in vitro incubation with pectin of the Robusta coffee peel.

Methods. Coffee peel pectins with concentration of 100, 50, 25, and 12.5 µg/mL were poured in a 96-wells culture plate and added human-PBMC. LPS with concentration of 10ng/mL were added in each well and subsequently incubated for 24 hours at 37°C and 5% CO₂. After incubation, the supernatant was collected and stored at -80°C until iNOS measurements with ELISA.

Results. Coffee peel pectin had anti-inflammatory properties by suppressing the iNOS level ($R^2=0.791$; $R=-0.890$; $p=0.022$).

Conclusion. The natural anti-inflammatory agent of coffee peel pectin is very useful for the development of pharmacotherapy in dentistry.

Keywords: anti-inflammatory agent, human-PBMC, inducible nitric oxide synthase, pectin

Characterization of coffee peel pectin hydrogel for biomedical application

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Introduction. Pectin of the Robusta coffee peel is a natural polymer that can be utilized as the basic ingredient of hydrogel. This pectin hydrogel may be used in biomedical applications because pectin has the ability to release therapeutic agents.

Aim. For the determination of its therapeutic capability, this pectin hydrogel was characterized based on the chemical and phase compositions, as well as the structural and morphological features.

Methods. Pectin of the Robusta coffee peel (1.5, 3.0 and 6.0 g) was mixed with 1.5 g of carboxymethyl cellulose (CMC) and dissolved with 35 ml distilled water. After completely dissolved, 10% sodium hydroxide was added to neutralize until pH 8. Furthermore, the mixture was added with 50 mM calcium carbonate and was stirred rapidly. The gel was poured onto a petri dish and left overnight at room temperature for gel stabilization. The chemical and phase compositions of pectin hydrogel were analyzed by Fourier transform infrared spectroscopy (FTIR) and the structural and morphological features were characterized by scanning electron microscope (SEM).

Results. Pectin hydrogel (6.0 g) showed the same FTIR with CMC 3%. The structural morphology of the hydrogel synthesized using 6.0 g pectin showed a porous structure with smooth surface morphology. This surface porosity would increase drug loading and releasing.

Conclusion. Pectin hydrogel from the Robusta coffee peel can be used for biomedical applications as gel periodontal for treatment of periodontal disease.

Keywords: coffee peel, hydrogel, pectin

Brief report: mutational spectrum of Thalassemia and Hemoglobin E in Province of Central Java and D.I. Yogyakarta, Indonesia

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Introduction. Thalassemia and hemoglobinopathy are the most common gene disorders in the world with approximately 400 mutations were reported causing the diseases.

Aim. Identification of mutation spectrum of α -thalassemia, β -thalassemia, and Hemoglobin E (Hb E).

Methods. Fifty seven blood samples of suspected thalassemia and Hb E carriers, volunteering of the annual screening of thalassemia YT/POPTI in Yogyakarta, Indonesia, were investigated for globin gene mutation by multiplex gap-polymerase chain reaction (multiplex gap-PCR), polymerase chain reaction-single-strand conformation polymorphism (PCR-SSCP), direct sequencing, polymerase chain reaction-restriction fragment length polymorphism (PCR-RFLP), high resolution melting analysis (HRMA) and.

Results. Fourteen (24.6%) of the 57 volunteers presented α -thalassemia heterozygous with three deletions identified. The $-\alpha 3.7$ deletion was the most frequent (73.3%) followed by $-\text{SEA}$ deletion and $-\alpha 4.2$ deletion with 13.3%. Twenty three (40.4%) volunteers presented β -thalassemia heterozygous with seven mutations identified. The IVS-I-5 ($G \rightarrow C$), was the most frequent (45.16%) followed by codon 35 (del C) and IVS-II-666 ($C \rightarrow T$) with 16.13%; the remaining four mutations were present with a frequency less than 10%. Twenty (35.1%) volunteers presented Hb E heterozygous caused by Cd 26 ($G \rightarrow A$).

Conclusion. The mutation causing thalassemia in Indonesia varied in its spectrum, from single base substitution, deletion, to large deletion. At least one of the most frequent mutations was identified in α -thalassemia, β -thalassemia, and Hb E.

Keywords: α -thalassemia, β -thalassemia, globin gene mutation, hemoglobin E, Thalassemia

The analysis cell damages/disturbances of liver and kidney among alcoholic in Yogyakarta, Indonesia

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Introduction. In the body, alcohol may influence organs function even disturbing or damaging them on chronic alcohol abusers. In Indonesia, the data on cells damage taken from organs including liver and kidneys among alcoholics had yet clearly to be analyzed

Aim. This aim of this study was to compare the differences of organs cell disturbance between alcoholic and non-alcoholic in Yogyakarta, Indonesia.

Methods. A cross-sectional study was conducted among 197 people in Yogyakarta. There were 96 alcoholic and 101 non-alcoholic. The material of the study was taken from venous blood sample of those people, then a Kinetic Photometric Test method was administered to have data on blood-chemical markers value of liver (SGOT, SGPT, and GGT), and kidney (BUN and serum creatinine). The data then was analyzed and Chi Square Test was conducted.

Results. There were 83.6% male and 16.4% female of 96 alcoholic that consumed alcohol for average 16 years, 51.6% of them routine consuming it daily. The kind of alcohol they consume was single-brand (59.8%). Based on 25 of percentile (GGT); on 50 of percentile (SGOT, GGT); on 75 of percentile (SGPT, GGT) the alcoholic had higher proportion value on liver marker disturbance than non-alcoholic and statistically significant ($p<0,05$). Based on 50 and 75 percentile, the alcoholic had higher proportion value on kidney marker (BUN) disturbance than non-alcoholic and statistically significant ($p<0,05$).

Conclusion. Conclusions: The alcoholic had higher proportion value on blood-chemical marker (SGOT, SGPT, GGT for liver, BUN for kidney) than non-alcoholic and statistically significant.

Keywords: alcohol, liver and kidney cell damage, Yogyakarta

Robusta coffee consumption induce longer heart rate recovery among medical students

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Introduction. Coffee is one of the most abundantly consumed beverage worldwide. One of its most controversial adverse properties is its effect on increased risk of cardiovascular disease. Heart rate recovery after submaximal exercise is a powerful mortality predictor of cardiovascular disease. Heart rate recovery refers to the recovery of heart rate to initial heart rate immediately after peak exercise.

Aim. The purpose of this research was to investigate the effects robusta coffee consumption, both caffeinated and decaffeinated, to heart rate recovery among medical students.

Methods. Eighty-one medical students that meet the inclusion and exclusion criteria divided into three groups, caffeinated, decaffeinated and one plain water group. Coffee was ingested on scheduled time, 3 times a day for 6 days. Heart rate recovery is measured with ergo cycle at day 7 after coffee ingestion.

Results. There is a significant difference of the resting HR between groups ($p= 0.000$). For the peak HR and HRR after one minute of rest, there is a significant difference between coffee groups and control group ($p=0.003$ and $p=0.008$ respectively) but not significant between caffeinated and decaffeinated group ($p=0.13$ and $p=0.22$ respectively). There is no significant difference in HRR after two minutes of rest between groups ($p=0.32$).

Conclusion. Ingestion of robusta coffee increase resting HR and peak HR, longer HRR after one minute of rest but not significant between caffeinated and decaffeinated.

Keywords: cardiovascular, heart rate recovery, robusta coffee, young adult men

Genetic polymorphisms of uncoupling protein 2 (UCP2) are risk factors of obesity among male and female adults in Java, Indonesia

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Introduction. Ala55Val and 45 bp insertion/deletion of UCP2 gene polymorphism causes a decrease in resting energy expenditure, decrease in fatty acid oxidation and influence of mRNA transcription and the stability, thereby increasing the risk of obesity.

Aim. the purpose of this study was to determine the role of polymorphism of Ala55Val and 45bp insertion/deletion of UCP2 gene on the risk of obesity.

Methods. This study consisted of 200 subjects Javanese ethnic concist of 100 obese and 100 non-obese group. Examination of Ala55Val (C>T) UCP2 genotype using polymerase chain reaction-Restriction Fragment Length Polymorphism (PCR-RFLP) method and 45bp I/D genotype using PCR method.

Results. Polymorphism of Ala55Val UCP2 genotype in the group of men showed that TT genotype and T allele were significantly lowers the risk of obesity. Insertion/deletion of 45 bp UCP2 gene in the group of men showed that II genotype and I allele significantly increases the risk of obesity whereas in women showed that the DI genotype and I allele lowers the risk of obesity.

Conclusion. The results of this study demonstrate that Ala55Val UCP2 polymorphism and insertion / deletion of 45 bp play a role in the risk of obesity in Javanese ethnic after gender stratification.

Keywords: deletion, insertion, obesity, polymorphism, UCP2

Frequency effect of sodium askorbat application 35% on shear strength of composite resin restoration at dentin post bleaching with hydrogen peroxide 35%

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Introduction. The bleaching material releases the free radical of perhidrosil and O nasen. Post bleaching procedures often have peroxide ion residues and O nasen in the dentine tubule, between the collagen matrix and in the interprismatic , which will remain active for a period of time, may lead to decreased adhesion of the restorative material. Sodium ascorbate is an antioxidant substance known to bind free radical residues.

Aim. The purpose of this study was to examine whether the 35% sodium ascorbate application frequency affected the shear strength of composite resin restoration in post-bleaching dentine with 35% hydrogen peroxide.

Methods. Seven premolars were separated by crown and root part, then the crown was cut into sagittal in a buco-lingual direction, into 2 equal parts. Furthermore, each part of the tooth was cut into 2 parts of the same, obtained the buccal and lingual, so that obtained 28 pieces of teeth. Teeth were fixed in self cured acrylic resin, applied 0.025 ml of 35% hydrogen peroxide, stored for 120 hours in the incubator at 37 ° C. After 120 hours the teeth were washed with 5 ml of distilled water and dried. The treatment was repeated 2 times. Furthermore, 28 subjects were divided into 4 groups: group A without application of sodium ascorbate, immersed in artificial saliva and stored in an incubator at 37°C for 7 days, then was restored with composite resin; Group B was applied 0.025 ml of sodium ascorbate 35% for 5 min, washed and dried then composite resin tump; Group C applied sodium ascorbate 35% twice with the same procedure, then was restored with composite resin; Group D applied 35% sodium ascorbate repeated three times, then was restored with composite resin. The shear bond strength of the composite resin was measured by Universal Testing Instrument (Zwick, USA) at a rate of 5 mm / min. Data were analyzed with Kruskall Wallis and U Mann Whitney.

Results. The result of Kruskall Wallis test showed that there was a difference of shear bond strength of composite resin in the four treatment groups ($p <0.05$). UMann Whitney U showed that there is a difference of shear bond strength of composite resin between group A with group C and D, and between group B with group C and D.

There is no difference of shear bond strength of composite resin between group A with group B, and between Group C with group D.

Conclusion. Frequency application of Sodium Askorbat 35% affect on Shear Strength of Composite Resin Restoration at Dentin post Bleaching with hydrogen peroxide 35%

Keywords: 35% Hydrogen peroxide, 35% Sodium ascorbate, bleaching, frequency of application, shear bond strength

AMOBA application of mother and baby as maternal education during pregnancy up to two years old

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Introduction. Maternal and infant health is matter of concern in Indonesia by reducing maternal mortality. In an effort to emphasize the mortality rate and the improvement of maternal and child health, is needed innovation in the form of information technology as means of education for pregnant women.

Aim. Creating innovation in form of information technology aims as one form of innovation for educational facilities in an effort to reduce maternal mortality and improve maternal and child health.

Methods. This research used descriptive qualitative research with phenomenological approach. Subjects in the study were Head of Puskesmas Jetis Yogyakarta, 37 health cadres, 45 mothers including pregnant women and new mothers. Sampling is done by interview and observation. For data validation we used source triangulation.

Results. AMOBA Application of Mother and Baby is one form of innovation that can be used as a means of education of mother and child health that can be used on android smart phone. We made cooperation with Puskesmas Jetis Yogyakarta to assist in AMOBA socialization. This Application gets good response from the Head of Pusesmas Jetis Yogyakarta, health cadres, and the community as users. Therefore, the public gets education so that the maternal mortality rate is reduced and the maternal and child health status increases.

Conclusion. Application of Mother and Baby is the latest innovation that can be used as an educative means of mother and child, to increase knowledge about mother and child health and can suppress maternal mortality rate at Puskesmas Jetis Yogyakarta.

Keywords: AMOBA, maternal education, mother and baby health

The quality of the infectious and non-infectious patient data from electronic medical record at primary health centers in Kulon Progo

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Introduction. Electronic medical record (EMR) have the advantage to facilitate the improvement of the quality of medical documentation. Some primary health centers at Kulon Progo district have started to implement the EMR to facilitate the health care to the community. All patients data from both infectious and non-infectious diseases are entered into the new EMR system and will be used as a reporting system to the health offices as well as to improve the quality of the medical services.

Aim. To analysed the quality of infectious and non-infectious disease based on EMR data in four primary health centers at Kulon Progo.

Methods. This is a descriptive analytical method that used the secondary data from EMR in four primary health centers in Kulon Progo District. A total 55373 medical record were collected during January to March 2017.

Results. A total of 55373 medical record data derived from the EMR system from four primary health centers were analysed for the completeness. Among them, only 7289 diagnoses are infectious diseases. The results suggest that the administrative data are the most complete among other category, which reach 96% followed with social data on the second place with 87%. Interestingly, the diagnosis data and the vital sign data that are considered very important are very low with only 65% and 24% respectively.

Conclusion. The results suggest that although they already used the EMR, the quality of the data especially related to the clinical data were still low. The implementation of the EMR seems still focus on administrative area rather then clinical aspects. Thus the completeness of the clinical data needs to be improved in order to allow them to facilitate the better health care.

Keywords: EMR, data quality

Improvement of the completeness outpatient form after new form implementation

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Introduction. The completeness of medical record file is important for patient safety, medical, health insurance and legal process. Medical record file must be complete in order to be used properly. Implementation of form is one way to improve the completeness of the form. Puskesmas Kedungbanteng do the implementation of a new form initially only outpatient form. A new form is created there are several types of forms, so that researchers would like to see a comparison of completeness on the outpatient forms before and after the implementation of the new form.

Aim. To know the comparison of the completeness of the outpatient forms before and after the implementation of the new form.

Method. The type of research used in this study was observational analytic study with cross sectional. Population research outpatient form before and after implementation, with a sample of 50 forms before and 50 forms after implementation. Data collection technique used documentation study and observation techniques.

Results. Completeness of the outpatient forms before implementation of the new form is reaching only 6% or 3 form. Completeness of the outpatient forms after the implementation of the new form reaching the 12% or 6 formular. The results of statistical tests indicate that there is an increase on the component identification ($p_value 0,01295$), there is an increasing important reports on components ($p_value 0,001629$), there is an increase in the authentication components ($p_value 0,02293$), there is no improvement on the correct documentation of components ($p_value 0,5502$), there is an increase on the completeness of the form after implementation with 0.00176 , p_value and PR value of 2, which means the increase completeness by as much as 2-fold.

Conclusion. The implementation of the new form is improving the completeness of outpatient form in Puskesmas Kedungbanteng with increased 2-fold.

Keywords: comparison, implementation, completeness, outpatient form

Validity and reliability of instrument to measure clinical indicator of nursing diagnosis: fatigue on patient undertaking hemodialysis

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Introduction. Diagnostic reasoning is not a simple process. Nurses need to ensure that symptoms are identified on patient before they can establish nursing diagnosis. Instruments is one of important component for accuracy in establishing nursing diagnosis.

Aim. Evaluating validity and reliability of instrument to measure clinical indicators of nursing diagnosis: fatigue on patient undertaking hemodialysis.

Method. Validity of instrument to measure clinical indicators of nursing diagnosis fatigue was analysed using S-CVI and I-CVI content validity index. This instrument was measured for relevance, accuracy, clarity, simplicity and ambiguity. Data for validity measurement was collected from three experts. Reliability was measured on 30 patients undertaking hemodialysis and analysed using Alpha Cronbach.

Result. S-CVI score was 1 on relevance, accuracy and clarity. While S-CVI score was 0.98 on simplicity and ambiguity. However, on the simplicity and ambiguity, item libido was only scored 0.6 in I-CVI. The Cronbach's Alpha of the instrument was 0.79 which was considered reliable.

Conclusion. The instrument to measure clinical indicators of nursing diagnoses fatigue has acceptable validity and reliability score.

Keywords: validity, reliability, fatigue, hemodialysis.

Relationship between mother's marital age and postpartum depression: an analytic study at Yogyakarta

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Introduction. There are a lot of change that mother in puerperal period felt. Be it physiologically or pathologically. In terms of pathologic condition, postpartum depression is one of commonest postpartum complication the mother had. This disorder could be mentally harmful to the baby, since the behavior will left baby's need unnoticed thus lead to failure to thrive. This disorder in small percentage could also progress into postpartum psychosis which will endanger the mother and the baby as the mother would not hesitate to do suicide or infant murder. So far, marital age is not yet considered as one of the risk factor.

Aim. To know the relationship among mother's marital ages with postpartum depression occurrence in Tegalrejo district.

Methods. This study using observational analytic, cross-sectional design. Data are obtained through EPDS questionnaire to postpartum mother in Tegalrejo Primary Health Center which conducted at February 2015. Sample selection method is using random sampling. Sample needed are 85 subjects. The result analysis is using Pearson's chi square (χ^2) and Fisher exact test.

Results. There is no significant relationship between mother's marital age with postpartum depression occurrence in Tegalrejo district, based on Pearson's chi square analysis. P value: 0.093; PR (95% CI): 1.68 (0.903-3.108).

Conclusion. This research shows that there is no significant relationship between mother's marital age and postpartum depression. Educational level and opinion to local belief also show no significant relationship. The prevalence of postpartum depression in Tegalrejo district is 34.1%.

Keywords: postpartum, depression, marital age, EPDS.

Training intervention to improve santris' hygienic practices in Yogyakarta: a mixed method study

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Introduction. Hygiene is a basic human being necessity. In congregate setting such as boarding schools, studies have shown poor hygiene and sanitation practices impacting on health.

Aim. To measure the impact of training intervention on improving santris' hygienic practices.

Methods. A mixed-method explanatory sequential design was applied. First, a qualitative data collection using three focus groups with 20 supervisors and one interview were carried out to explore supervisors' perceptions. The information was then used to develop the intervention, to be used in the main quantitative phase employing a stepped wedge cluster design with pre and posttest. A number of 452 junior high school santris were non-randomly allocated in either video, poster, or leaflet methods of intervention. The outcomes were knowledge, personal behavior and room hygiene. Codes and categories were produced in the qualitative analysis, while Paired t-test and Wilcoxon rank test were used in the quantitative analysis.

Results. Training was proposed as the main intervention. Overall, knowledge and personal behavior increased significantly (from 7.22 ± 1.34 to 7.70 ± 0.74 and from 9.75 ± 2.98 to 12.16 ± 2.12 respectively, $p<0,001$). However, room hygiene was only significantly improved among the boys and those who received leaflet. Although girls had higher knowledge than boys (7.74 vs 7.65), their personal and room hygiene were poorer (11.74 vs 12.72 and 4.39 vs 6.83 , respectively).

Conclusion. Hygiene training intervention improved santris' hygienic practices, especially among the boys. Further research is required to explore challenges faced by the girls for future modifications of the intervention.

Keywords: hygiene training, Islamic boarding school, mixed methods research

Epidemiology of characteristics and presentation of pediatric dengue cases in Surabaya

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Introduction. Dengue risk factors distribution are vary depending on the region. There is a need to understand epidemiological characteristics of dengue for a better understanding, treatment, and prevention, especially in dengue high prevalence region such as Surabaya.

Aim. Identify the epidemiology characteristics and presentation of pediatric dengue cases in Surabaya.

Methods. A cross-sectional study with consecutive sampling in Instalasi Rawat Inap Anak RSUD Dr. Soetomo, Surabaya, Indonesia, during March—September 2016. The study involved 86 dengue pediatric patients with 51 patients that fulfilled the inclusive criteria. The patients characteristics and presentation were collected from medical records.

Results. Among 51 patients, 65.4% were males and 34.6% were females. The age group distribution involved toddler 0—5 years old (25%), children 5—11 years old (52%), early adolescent 12—16 years old (21%), and late adolescent ≥ 17 years old (2%). The blood groups were A (12%), B (13%), AB (13%), and O (42%). The dengue diagnosis were dengue fever (38%), dengue hemorrhagic fever (DHF) grade I (25%), DHF grade II (10%), DHF grade III (15%), DHF grade IV (10%), and expanded dengue syndrome (2%).

Conclusion. Based this study, the most prevalence prone to pediatric dengue cases in Surabaya, based on gender were males, based on age group were children, based on blood group were O. While most cases presented in category dengue fever.

Keywords: characteristics, dengue, epidemiology, pediatric, presentation

Indonesian version of Shortened General Comfort Questionnaire (SGCQ): validity and reliability

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Introduction. One of nursing consent is patient's comfort. In nursing terminology, there is one nursing diagnosis refer to this namely Impaired comfort. One of tool to measure patient's comfort is by using Shortened General Comfort Questionnaire (SGCQ). This instrument however, has never been adapted in Indonesia language and there is no information of the validity and reliability of this instrument.

Aim. To identify the validity and reliability of Shortened General Comfort Questionnaire (SGCQ) in Indonesian version.

Methods. Three experts were recruited to measure the content validity of Shortened General Comfort Questionnaire (SGCQ) in Indonesian version. S-CVI and I-CVI analyses were used to measure the validity of this instrument. Analysis for the reliability of this instrument was using Cronbach's Alpha from data of 30 patients undertaking hemodialysis.

Results. Both I-CVI and S-CVI were 1 in score and Cronbach Alpha was 0.784.

Conclusion. Shortened General Comfort Questionnaire (SGCQ) in Indonesian version has acceptable validity and reliability.

Keywords: comfort, hemodialysis, reliability, validity

Elimination of soil-transmitted helminth infection in Bangladesh: knowledge, attitudes, and practices regarding Mass Drug Administration

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Introduction. Soil-transmitted helminth (STH) infection is targeted for elimination in Bangladesh through school-based mass drug administration (MDA). Despite several rounds of MDA, prevalence of STH is still remaining high in several areas. A clear understanding of the local knowledge, attitudes, and practices is critical for effective implementation of the intervention.

Aim. This study was taken to assess knowledge, attitude and practices of community which are related to the acceptance and utilization of the MDA intervention.

Methods. This was a cross-sectional descriptive study that utilized quantitative methods and conducted between the periods of February 2017 to June 2017. A total of 380 questionnaires survey was done with school-aged children (SAC), parents of school-aged children and school teachers. All collected data were entered and analyzed with Epi-info version 6.0 and percentage were calculated. In order to conclude whether results are statistically significant or not, the cut-off point for p-values was set at 0.05.

Results. Out of 160 school aged children, 81.9% had heard about STH and 75.6% had heard about MDA. School-aged children showed higher awareness of STH and also recognized the importance of preventive measure and MDA. In case of parents of school age children and school teachers, close to half of the respondents were knowledgeable about STH and MDA. It was revealed that the participants have positive attitude towards MDA but they pointed out school-based MDA has limitations, as non-school going children are neglected. MDA as effective was cited by 68.3% of school teachers and 56.8% parents of school-aged children.

Conclusion. This study explored the knowledge, attitudes and perceptions of the community regarding STH prevention and it aimed to find out the practices that the community do to prevent and control STH in Bangladesh. Re-strategize the MDA policy and integration with health education is necessary to achieve the target of STH elimination.

Keywords: attitudes, Bangladesh, knowledge, Mass Drug Administration, practices

Therapeutic potential of Lemuru Fish (*Sardinella longiceps*) oil in mice with Osteoarthritis of temporomandibular joint

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Introduction. Osteoarthritis (OA) in the temporomandibular joint is characterized by chronic inflammation and marked with joint cartilage depletion. Declining collagen fibers density and number of chondrocytes can trigger joint cartilage friction that increases the inflammatory joint diseases. Lemuru Fish oil contains the highest Eicosapentaenoic Acid (EPA) dan Docohexaenoic Acid (DHA) that have antiinflammatory properties.

Aim. To observe the potential of Lemuru Fish oil (*Sardinella longiceps*) on the chondrocytes number and collagen fibers density and in temporomandibular joint cartilage in mice with Osteoarthritis.

Methods. This laboratory experimental research used 24 Sprague-Dawley male mice that were randomly divided into 2 groups; control (induced OA and sterile saline solution) and treatment (induced OA and Lemuru fish oil). Mice were given osteoarthritis induction by Complete Freund's Adjuvant (CFA) injection on the right side of temporomandibular joint. Tissues were taken on day 7, 14, 21, and stained with HE and Mallory Trichrome.

Results. The collagen fibers density of temporomandibular joint in control group was lower than the treatment group. Collagen fibers density increased significantly between control and treatment groups on day 14 and 21 ($p<0,05$). While there wasn't significant difference between control and treatment groups on day 7. Number of chondrocytes increased significantly between control and treatment groups on day 7, 14 and 21 ($p<0,05$).

Conclusion. Lemuru fish oil (*S. Longiceps*) could increased collagen fibers density and number of chondrocytes of temporomandibular joint cartilage in mice with osteoarthritis.

Keywords: collagen fibers density, number of chondrocytes, lemuru fish oil, osteoarthritis, temporomandibular joint

Validation of Google Trends with dengue surveillance data in Yogyakarta Province

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Introduction. Google Trends have been considered as an alternative data source for disease surveillance program. Yogyakarta is the fourth highest province with dengue cases in Indonesia. No study was conducted to evaluate the potential use of Google Trends for dengue surveillance given high Internet penetration in this area.

Aim. Identification of Google Trends as alternative data source for dengue surveillance in Yogyakarta.

Methods. We collected weekly data of information searching pattern from Google, started from the year of 2012 to 2016 with 13 search terms related to Dengue in bahasa Indonesia. Obtained data were validated with official dengue reports from Provincial Health Office. Comparison of time series data between Google Trends and surveillance report were calculated using Pearson Correlation in Stata 13.

Results. Compared to other, the search term of “demam berdarah” in Google is having the highest similarity with the surveillance report in the last five years. There are 3 outbreak peaks occurred in the year of 2012, 2015 and 2016 respectively. Pearson correlation showed moderate to high correlation ($r= 0.65$, p value= 0.000). These findings indicated that information searching pattern of Dengue in Google was similar to the real surveillance data.

Conclusion. Google Trends data on dengue has similar pattern to the official dengue report. Google Trends is potential to be used as an alternative data source for dengue surveillance in Yogyakarta Province. Further study is needed to validate data from Google Trends with national level surveillance program and to replicate this study to other infectious diseases.

Keywords: dengue, Google Trends, public health informatics, surveillance

Efficacy of Hepatitis B vaccination among children in Special Region of Yogyakarta, Indonesia: evaluation of humoral and cellular immunity

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Introduction. Hepatitis B remains a global burden, with estimated 15 to 40 percents of infected individuals eventually suffer from liver cirrhosis, liver failure, and hepatocellular carcinoma. Vaccination aims to form anti-HBs antibody with protective titer to prevent infection. CD4 T cell lymphocytes are known to play a major role in establishing immunity after vaccination.

Aim. Investigation of protective titer rate among Indonesian children in Special Region of Yogyakarta following hepatitis B vaccination and correlation between anti-HBs titer and CD4 count.

Methods. This is a cross-sectional study with 52 subjects between 8 months to 5 years of age in Bungas Community Health Service, Special Region of Yogyakarta, Indonesia. Anti-HBs titer was examined using enzyme immunoassay and CD4 count was examined using immunocytochemistry method.

Results. Of 52 subjects, median anti-HBs titer was 72.965 IU/L (interquartile range 360.98), mean CD4 count was $49.73\% \pm 29.75$. Protective level of antibody was found in 73.1% of subjects. Correlation test was conducted and no correlation was found between anti-HBs titer and CD4 count ($r=-0.104$, $p=0.464$). Age was found to have a weak negative correlation with anti-HBs titer ($r=-0.367$, $p=0.007$).

Conclusion. We found high rate of protective titer among children in Special Region of Yogyakarta who have completed hepatitis B vaccination series. No correlation was established between anti-HBs titer and CD4 count.

Keywords: anti-HBs titer, CD4, hepatitis B, vaccination

Identification of characteristics subject as risk factors of nevarapine allergy in Indonesian HIV/AIDS patients

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Introduction. Nevirapine (NVP) is one of antiretroviral (ART) drugs that used as first-line ART in Indonesia. It often causes side effects such as adverse cutaneous drug reaction and/or liver toxicity. Various studies on the risk factors of NVP allergy drug reactions vary. Has never been studied risk factors of allergy to nevirapine drugs in people with HIV / AIDS in Indonesia.

Aim. Identification of characteristic subject as the risk factors of nevirapine allergy in Indonesian HIV/AIDS patients.

Methods. This is a case-control study on HIV patients who demonstrate adverse drug reactions after consuming NVP. Patients with HIV infection who took nevirapine but did not show cutaneous drug allergy and/or liver toxicity were taken as control. To assess the relationship of 2 variables analyzed with Chi-Squared (χ^2) with significance $p \leq 0.05$; while to know the most dominant variables associated with outcome would multivariate analysis with significance level of $p \leq 0.05$ and with a confidence level of 95%.

Results. The number of cases of HIV recruited as subjects of the study was 152 people. The majority of age ranges from 25 to 49 years with a median age of 33 years (IQR = 13). Statistic using multivariate analysis, found sex significantly associated with the incidence of allergies NVP ($p < 0.05$; OR: 0.352; 95% CI: 0.165 - 0.750); men 4.5 times more at risk than women. Age significantly associated with the incidence of allergies ($p < 0.05$; OR = 0.400; 95% CI: 0.201 - 0.795), younger age are more at risk for the occurrence of NVP allergic compared to old age. There is no relationship between BMI, CD4 count, the initial dose of NVP, consumption of other drugs with NVP allergy ($p > 0.05$).

Conclusion. Risk factors of nevirapine allergy among HIV patients in Indonesia are male patients and younger age. Additionally, BMI, CD4 level, and initial high dose of NVP, are not risk factors for nevirapine allergy. Men and younger age are at risk for mild skin lesion and risk for both light and heavy degree hepatotoxicity.

Keywords: allergy, HIV/AIDS, nevarapine, risk

Correlation of nutritional status and behavior with hookworm and *Strongyloides stercoralis* infection in children under five years in Kokar Public Health Center, Alor Regency

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Introduction. Malnutrition can reduce immune response particularly in cytokine production and immune effector, therefore it may lead to increase in probability of intestinal nematode infection. Non-hygienic behaviors can has the same effect as malnutrition in intestinal nematode infection. Intestinal nematode infection in children under five years old may cause growth and developmental disorder. Intestinal nematode infection in children mostly are cause by soil-transmitted helminth (STH), which include hookworm and *Strongyloides stercoralis*.

Methods. A cross-sectional study with quote sampling technique. There were samples aged 12-59 months as many as 238 people in Kokar's public health center, Alor regency. Data collection was held in August - October 2016. To determine behavior of children and their parent, children's parent were interviewed with a questionnaire guide. Identification of helminth infection in collected fecal samples using Baermann test, *Koga Agar Plate* (KAP), dan Harada-Mori culture method.

Results. The prevalence of hookworm and *S. stercoralis* infection was 8.82%, and 0,42%. Correlation between nutritional status and hookworm infection were analyzed by Mann-Whitney test with p value = 0.54 ($p > 0.05$). Non-hygienic behavior has no correlation with hookworm infection prevalence.

Conclusion. Prevalence of hookworm and *S. stercoralis* among children under five years in Kokar were 8.82% and 0.42%. There was no significant correlation between nutritional status and non-hygienic behavior with hookworm infection prevalence.

Keywords: behavior, hookworm infection prevalence, Kokar, Alor Regency, nutritional status

The effects of combination between Temugiring (*Curcuma heyneana*) and Meniran (*Phyllanthus niruri* L.) on hematology and biochemistry blood profile of layer chicken vaccinated with Avian Influenza

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Introduction. Avian influenza (AI) still becomes an important issue for health problem. The disease can cause considerable economic losses i.e. up to 100% in chicken mortality. Temu Giring (*Curcuma Heyneana*) and Meniran (*Phyllanthus niruri* L) are known as herbs that can be used for immunomodulators.

Aim. This study was aimed to determine the level of safety of combination between temugiring and meniran on hematological and biochemical profile of chicken blood vaccinated with AI.

Methods. 1. Preparation stage (preparation of Day-Old-Chicken), 2. Vaccination of chicken (Newcastle Disease and Killed Vaccine Avian Influenza), 3. Grouping chicken consisted of 2 groups (a) Control group (KA), b) Group vaccinated with 200 mg/kg BW extract of temugiring + 100 mg/kg BB extract of meniran (KB), 4. After 30 days treatment, blood sampling was undertaken, 5. Testing of blood samples for hematological profile (hemoglobin, hematocrit, erythrocyte, leukocyte) and blood biochemical profile (alanine transaminase or ALT and creatinine), 6. Conducting statistical analysis.

Results. The combination group of temugiring and meniran had higher hemoglobin, hematocrit, erythrocyte, ALT, and creatinine levels than the control group. However, there were no significant differences for overall groups.

Conclusion. Combination of extract of temugiring and meniran for 30 days did not cause changes in hematological and blood biochemical profiles, liver and kidney dysfunction in layer chicken vaccinated with AI.

Keywords: Avian Influenza, blood biochemistry, hematological profile, layer chicken, Temugiring-Meniran

Characterization endosymbiotic bacteria isolated from *Aedes aegypti* and their activity against larvae of *Aedes aegypti*

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Introduction. Mosquitoes particularly *Aedes aegypti* is one of insect vectors dengue fever. Its midgut is an important site for interaction between host and bacteria. Many types of bacteria inhabiting midguts of *Aedes* are commonly as normal flora and interact as beneficial symbionts or as a parasite. Those bacteria might play a key role in the host - parasite interaction and enhance vectorial capacity of diseases like dengue fevers. Previous studies used *Wolbachia* sp. not their bacterial symbiont, to control of dengue fever. Therefore, this research emphasized on the occurrence of endosymbiotic bacteria on midgut of *Ae. aegypti* and their effects on development of its larvae.

Aim. The aims of this research were to obtain of the endosymbiotic bacteria from midgut of *Ae. aegypti*, to determine the antibacterial activity of bacterial isolates, and to analyze the effects of bacterial isolates on development of *Ae. aegypti* larvae.

Methods. Larvae and pupa of *Aedes* mosquitoes were collected from different area around Mergangsan and Depok of Yogyakarta City. Biochemical characterization and 16S rRNA gene sequences were used for identification of bacterial isolates from *Ae. aegypti*. To assess the diversity of the bacterial isolates in midgut of *Aedes aegypti*, antibacterial activity on pathogenic bacteria models was analyzed as diversity indices. The effect of endosymbiotic bacterial isolates on developments of *Aedes* larvae was carried out using selected isolates having a high capacity on bacterial growth inhibition.

Results. Ten endosymbiotic bacteria were successfully isolated from *Ae. aegypti*. On the basis of biochemical characteristics and 16S rRNA gene sequence analysis, most of those isolates were gram positive bacilli, identified belonging to Firmicutes and gram negative *coccus-shaped bacteria*, unidentified. Only one bacterial isolate (strain BAE-A1) demonstrated a broad spectrum of antibacterial activity against *Staphylococcus aureus* (gram positive bacterium) and *Escherichia coli* (gram negative bacterium); three isolates (strain BAE-A2, BAE-A4 and BAE A5) showed a narrow spectrum of antibacterial activity, inhibited *E. Coli* only; and rest of isolate did not show an antibacterial activity. Bacterial isolate of BAE-A1 triggered development and survival of larvae. Information on the occurrence of midgut endosymbiotic bacteria may lead towards the development effective strategies to manipulate the *Aedes* vectorial capacity.

Conclusion. Ten different bacterial isolates obtained from midgut *Ae. aegypti* were endosymbiotic bacteria, including gram positive bacilli and gram negative coccus. Four of ten bacterial isolates showed their antibacterial activity against pathogenic bacteria; only one bacterial isolate (strain BAE-A1) demonstrated a broad spectrum, killed *S. aureus* & *E. coli*, and three bacterial isolates with a narrow spectrum of antibacterial activity (killed only *E. coli*); Isolate BAE-A1 having characteristics resembled to *Bacillus* spp. and gram negative cocci was unidentified. The occurrence of *Ae. aegypti* midgut endosymbiotic bacteria may lead towards the development of effective strategies to manipulate the Aedes vectorial capacity.

Keywords: *Aedes aegypti*, antibacterial activity, endosymbiotic bacteria, larvae

Evaluation of household's knowledge, attitude, practice on water processing, and diarrhea prevalence in community

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Introduction. Diarrhea is an endemic disease in Indonesia and potentially becoming outbreak. This condition may accompanied by death. The availability of clean drinking water of importance to overcome the emergence of diarrheal diseases in the community. Health determinants such as knowledge, attitudes and behavior of water processing of households also play an important role against the emergence of diarrhea.

Aim. To describe relationship between knowledge, attitudes, and practice of heads of households on water processing and prevalence of diarrhea.

Methods. A cross sectional survey on 93 households in Lampulo village, Kuta Alam sub-district, Banda Aceh, Aceh Province has been conducted on December 2016. Assessment on knowledge, attitudes, and practice on water processing of head of households and diarrhea prevalence was evaluated. Simple random sampling technique was applied and respondents were interviewed using questionnaires. Frequency of distribution of respondent's age and level of education were analyzed. Chi square test was applied to analyzed relationship between water source and prevalence of diarrhea of heads of households. Relationship of knowledge, attitudes, and practice on water processing of heads of households were analyzed by Spearman's coefficient correlation ($\alpha=95\%$; $\alpha=0.05$).

Results. Household's source of drinking water were piped water 87(93.5%) and well water 6(6.5%). Water sources which were used by respondents who have ever experienced diarrhea; piped water 30(32.26%) and well water 2(2.15%). From 93 respondents, 32 (34.4%) of households were ever experienced diarrhea. Relationship of knowledge and diarrhea prevalence has low positive correlation ($r=0.219$, $p=0.035$); attitude and diarrhea prevalence has weak positive correlation ($r=0.326$, $p=0.01$), practice and diarrhea prevalence has negatively weak correlation ($r=-0.256$, $p=0.013$). Chi square test showed that water source and prevalence of diarrhea had no statistical relationship ($p = 1.000$).

Conclusion. Knowledge, attitudes, and practice on water processing of the heads of households were correlate to prevalence of diarrhea. It is a need to do preventive and promotive programs concerning water processing in order to decrease number of prevalence of diarrhea.

Keywords: attitude, diarrheal disease, knowledge, practice, water processing

Forecast analysis tuberculosis incidence based on data code of ICD 10 in Yogyakarta Regional Hospital

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Introduction. The prevention of tuberculosis is still a concern with the increasing number of recurrent TB cases, one of the things that support it is the integrated recording. But the data has not been utilized properly. Therefore, predicting the Incidence of tuberculosis based on the data code of ICD 10 plays an important role in planning health control strategies for the future, developing intervention programs and allocating resources.

Aim. The Present Longitudinal Study Estimated the incidence of tuberculosis in 2021 using time series analysis.

Methods. Monthly data of Tuberculosis case recorded in medical record from 2012 till 2016 was used. Data reviewed regarding normality, variance equality and stationary conditions. The regression analysis was chosen.

Results. during 60 months, 1854 TB patients were recorded. The average was 31 ($SD=9.9$) TB cases a month. ICD 10 code which appears most of every year is A.16.2. It was predicted that the total cases from 2017-2021 will be about 3006 people, with p value =0.001 (CI 95% =1.2-4.5).

Conclusion. Prevention Tuberculosis may be focused on children and there needs to be an improved diagnosis of advanced TB diagnosis. Predicted results indicate a tendency to increase TB cases in Yogyakarta City.

Keywords: forecasting, time series, tuberculosis

Accuracy of mean platelet volume and platelet distribution width for diagnosis of acute appendicitis

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Introduction. Acute appendicitis (AA), the most common emergency cases in children, is still difficult to diagnose since 30-40% of the cases does not show its typical symptoms. An accurate diagnosis for AA is essential because of its potential complications, therefore, a new biomarker for its diagnosis is necessary.

Aim. We aimed to compare the mean platelet volume (MPV) and platelet distribution width (PDW) values in patients with acute appendicitis and control groups.

Methods. During December 2014 to July 2016, we ascertained 107 patients with acute appendicitis and 52 patients with hypospadias/undescended testes as controls. We compared the white blood cell count, PDW and MPV values between the groups and between patients with simple and perforated appendicitis.

Results. The MPV value was significantly lower in the AA group than the control group (8.3 ± 1.9 vs. 9.2 ± 1.5 , respectively; $p < 0.05$), while the PDW values was not significantly different between the groups (10.4 ± 1.4 vs. 10.7 ± 2.4). The area under curve (AUC) of MPV was 0.619 with normal value of 6.6 fl, whereas its sensitivity and specificity was 90% and 30%, respectively. The white blood cell count was significantly higher in the AA group than the control group (15 ± 6.5 vs. 9.2 ± 2.8 , respectively; $p < 0.05$) with AUC of 0.77 and normal value of 10, while its sensitivity and specificity was 75% and 70%, respectively. In addition, there was no MPV value difference between the simple and perforated appendicitis groups (8.3 ± 2.0 vs. 8.5 ± 1.9 , respectively), whereas there was a significant difference between simple and perforated appendicitis groups in the white blood cell count (12.6 ± 5.4 vs. 17.3 ± 6.7 , respectively; $p < 0.05$).

Conclusion. MPV shows a relatively high sensitivity and moderate specificity for diagnosis of acute appendicitis. Further study involving healthy children as a control group and the histopathology findings as a gold standard is needed to clarify the results.

Keywords: acute appendicitis, biomarker, child, diagnosis, MPV, PDW

The effect of gamat emas collagen with local hydroxyapatite as bone substitute material toward osteoblast for immediate denture treatment

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Introduction. Immediate Denture wearing is very important after tooth extraction, because it can rehabilitate mastication, phonetic and aesthetics. After tooth extraction, alveolar bone resorption has disturbing the stabilization and retention of denture. Hydroxyapatite has several weaknesses has hight bone density. Gamat emas collagen is a product of tripang emas (*Sticophus hermani*) collagen extraction which contains 80% collagen.

Aim. The purpose is to observe the effect of gamat emas collagen with local hydroxyapatite as bone substitute material toward osteoblast for immediate denture treatment.

Methods. The subject was 75 male of Rattus Sprague Dawley, each was 3 months old. The subject was divided into 3 groups. The group I was gamat emas collagen and local hydroxyapatite, the group II was gamat emas collagen, and group III was collagen. Each of subject was decapited after 3, 7, 14, 28, 56 days after treatment. The defect was made on the femur condyle of Rattus Sprague Dawley. The histological slides was made from defect area. The trinocular microscope was used to measure of osteoblast. The data was analyzed using two ways anova test.

Results. The two ways anova test showed there is significant difference between group of gamat emas collagen and local hydroxyapatite, group of gamat emas collagen and group of collagen after 3, 7, 14, 28, 56 days treatment on the number of osteoblast ($p<0.05$).

Conclusion. Gamat emas collagen with local hydroxyapatite as bone substitute material increased osteoblast compare with gamat emas collagen, and collagen, for immediate denture treatment.

Keywords: collagen, Gamat Emas collagen, local hydroxyapatite, osteoblast

Nano sisal dental composite: flexural strength with different filler volume

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Introduction. Nano sisal dental composites were the newly made dental fillings in this study. They had different filler types than dental fillings currently used by dentists. We made their by nano sisal as filler.

Aim. To determine flexural strength of nano sisal dental composite with different filler volume.

Methods. We used 20 sample, that were divided into 4 groups. First group were made by nano sisal dental composite 60 wt% filler volume, second group: nano sisal dental composite 65 wt% filler volume, third group: nano sisal dental composite 70 wt% filler volume, and fourth group: nano filler dental composite that currently were used by dentists in Indonesia (Z350 XT, 3M). Each Sample sized (65 x 10 x 2,5) mm (ANSI/ADA specification No. 27-1993). Samples were tested flexural strength by universal testing machine (Henson). Data was analyzed by oneway Anova.

Results. There was no significant difference between each group. Nano sisal dental composite 60 wt% filler volume was the highest flexural strength.

Conclusion. Nano sisal can be used as filler into dental composite. Filler volume could not influence to flexural strength in this study. 60 wt% was the most optimum level of filler volume.

Keywords: dental composite, flexural strength, filler volume, nano sisal

Non surgical iatrogenic perforation repair using mineral trioxide aggregate and direct restoration with fiber post on central maxillary incisor

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Introduction. Perforation can be a problem that leading to root canal treatment failure in the long run. Perforation can be caused by iatrogenic factor. The most common iatrogenic perforation was found at maxillary anterior. Non-surgery iatrogenic perforation repair can be done using mineral trioxide aggregate and direct restoration.

Aim. The purpose of this case report was to describe non-surgical iatrogenic perforation repair using mineral trioxide aggregate and direct restoration with fiber post.

Case. A 27 years old male patient diagnosed for pulpitis came to RSGM Prof. Soedomo. Root canal treatment (pulp extirpation) had performed before he was referred for further treatment. Objective test showed both percussion and palpation were negative. From periapical radiograph could be noticed that there was no file left in the root canal.

Case management. Root canal treatment was performed using step back technique and lateral condensation. Perforation was sealed by mineral trioxide aggregate. The tooth was restored using direct restoration with fiber post.

Conclusion. Iatrogenic perforation can be treated non-surgically using mineral trioxide aggregate and directly restored using composite resin with fiber post.

Keywords: iatrogenic perforation, mineral trioxide aggregate, non surgery iatrogenic perforation repair, direct restoration.

The effect of collagen activation on platelet rich plasma to proliferation of periodontal ligamen fibroblasts

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Introduction. Regenerative procedure in Periodontal surgery is purposed to improve the structure and function of the periodontium to be strong enough to support the teeth. Growth factor is absolutely necessary in the process of tissue regeneration can be generated from the PRP activation. In this study collagen was used as PRP activator. Platelet-Rich Plasma (PRP) release growth factors that can stimulate cell proliferation. Platelets will release growth factor from the granules when activated.

Aim. To evaluate the effect of collagen on PRP activation and the collagen-activated PRP storage to fibroblast proliferation of periodontal ligament (PDL).

Methods. Fibroblasts of PDL were obtained from extracted premolar. PRP obtained from 100 ml of blood donors using double centrifugation methods. PRP activated with collagen and incubated for 24, 48, 72 hours and 168 hours, after which the lysate was taken. Fibroblasts were divided into seven groups, one group unstimulated group as negative control, one group was stimulated by PRP lysate, five other groups each stimulated with PRP-collagen lysates that had been incubated for 24 hours, 48 hours, 72 hours and 168 hours. MTT Assay was than performed after one and three days.

Results. The proliferation rate of fibroblasts group was stimulated by PRP - collagen lysate higher than the group stimulated by PRP. Collagen-activated PRP stored for 7 days at 4° C could increase the proliferation rate.

Conclusion. The activation of collagen on PRP and the stored collagen-activated PRP could increase the fibroblasts proliferation rate of PDL.

Keywords: collagen, platelet-rich plasma, proliferation of fibroblasts.

The effect of calcium phosphopeptide amorphous calcium phosphate (CPP-ACP) and calcium phosphopeptide amorphous calcium fluorophosphate (CPP-ACFP) on glucosyltransferase activity

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Introduction. Glucosyltransferase plays an important role as a caries marker since it can change sucrose to glucan, a virulence factor of *S. mutans*. Unsoluble glucan can promote *S. mutans* colonization that result in caries.

Aim. Determine the influence of CPP-ACP and CPP-ACFP on glucosyltransferase activity

Methods. We measure glucose level using High Performance Liquid Chromatography (HPLC) after the teeth were treated with CPP-ACP after bleaching only (Group I), CPP-ACP before after bleaching (Group II), CPP-ACFP after bleaching only (Group III), CPP-ACFP before after bleaching (Group IV). After treatment either with CPP-ACP or CPP-ACFP, the teeth were immersed in sterilized saliva, washed using PBS, immersed in *S. mutans* ATCC 25175 (10^8 CFU), incubated, immersed into sterilized BHI and vortex to detached the *S. mutans* adhered on the specimens. Furthermore, *S. mutans* containing BHI was inserted into glass tube containing buffer phosphate and sucrose, followed by preparation for glucosyltransferase activity.

Results. The application CPP-ACFP before and after bleaching showed the lowest result in glucosyltransferase activity compare to three other groups. Statistical analysis using oneway Anova showed there was significant difference among all groups ($p < 0,005$). Least Significant Different Test showed there was significant difference between Group I and II, Group II and IV, Group I and IV, Group II and IV. There was no significant difference between Group II and Group III.

Conclusion. Group IV (CPP-ACFP applied before and after bleaching) was the most effective treatment to reduce glucosyltransferase activity.

Keywords: CPP-ACP, CPP-ACFP, glucosyltrasferase activity

The effectiveness of clinical practice guidelines implementation in reducing complications of impacted lower third molar odontectomy

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Introduction. One measure to improve the quality of dental services, and at the same time reduces cost, is the implementation of clinical practice guidelines (CPG).

Aim. To determine the effectiveness of the implementation of CPG in reducing complications of impacted lower third molar odontectomy.

Methods. We used a quasi experimental study, with a pretest-posttest without control group design. One hundred and seventy one subjects were recruited by means of a consecutive sampling method from patients receiving odontectomy in the Oral Surgery Department, Prof. Soedomo Dental Hospital, Yogyakarta, Indonesia. Eighty eight of those patients were recruited before the implementation of the CPG, and the rest were those who underwent treatment after the implementation of the CPG. At day 7 after the odontectomy, patients were clinically examined to measure the occurring post-odontectomy complications. Data were analyzed using chi square, multiple logistic regression and generalized estimating equations tests, with a 5% significance level.

Results. In the pre-implementation and in the post-implementation group, the complication rate were 37.5% and 10.8% respectively. The difference was significant ($p=0.001$).

Conclusion. Implementation of CPG reduced the frequency of day 7 complications of impacted lower third molar odontectomy.

Keywords: clinical practice guidelines, complications, odontectomy

Degradation profile of synthetic coral scaffold in cell culture media

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Introduction. Scaffold is one of factors in tissue engineering that determine the success of bone regeneration. The important characteristic of scaffold is able to degraded gradually. In in vitro study using cells, scaffold will exposed with culture media. Therefore, degradation profile for scaffold need to be examined.

Aim. To investigate the degradation profile of synthetic coral scaffold in cell culture media using pH measurement.

Methods. The synthetic coral scaffolds were prepared from denaturalized collagen (gelatin) and calcium carbonate (calcite) with concentration of 5:5 and 4:6 weight % in aquadest. The scaffold compositions were fabricated in membrane thick film like, which were then physical crosslinked. Gelatin 10% scaffold was used as a control. The scaffolds were incubated in cell culture media (non-phenol red Dulbecco's Modified Eagle Medium) for 1 until 8 days, and pH changes of medium was measured.

Results. Profile of degradation on 1st to 4th showed the 5:5 scaffold had a smallest degradation. The results indicated the significant different between scaffold concentration in 1st ($p=0.005$), 5th ($p=0.03$), and 6th day ($p=0.011$). In the end of incubated days the pH changed but not significant different. LSD showed the significant different between scaffold (5:5 and 4:6) with control, and no significant different between 2 concentrations of scaffold.

Conclusion. The synthetic coral scaffold degraded gradually until the end incubation time and between concentration had different degradation profile in the early incubation time using pH measurement.

Keywords: bone regeneration, degradation, non phenol red DMEM, synthetic coral scaffold

Chemopreventive activities of 'Woja Laka' black rice bran fractions on liver carcinoma HepG2 cells

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Introduction. Black rice bran has a number of health benefits and it contains a phytochemical that is associated with a decreased cancer risk.

Aim. To examine the ability of ethanolic extract fractions of 'Woja Laka' black rice bran to prevent the growth of liver carcinoma HepG2 cells.

Methods. Ethanolic extracts of 'Woja Laka' and 'IR 64' (white rice) bran were fractionated by preparative thin layer chromatography. The cytotoxic activities of the fractions were conducted on HepG2 cell lines by using the MTT assay. When the IC₅₀ value of the fraction showed less than 500 µg/ml, it was tested for anti-proliferation using the doubling time method, apoptotic induction and cell cycle arrest by a flow cytometry method, and tested for selectivity on a Vero cell line.

Results. Six fractions (F1, F2, F3, F4, F5 and F6) were examined for their preventive activities on HepG2 cells. The selected fractions F3 and F6 showed highly cytotoxic activity (184.35 ± 16.81 and 283.64 ± 58.13 µg/ml respectively) on HepG2 cells. Furthermore, the fractions of white rice bran extract showed IC₅₀ values > 500 µg/ml. We found that the fractions F3 and F6 were able to inhibit cell proliferation, induce apoptosis and cause G₀/G₁-phase arrest in the HepG2 cells, while the Vero cells were less responsive to these fractions (IC₅₀ > 470 µg/ml).

Conclusion. These results suggest that the compounds found in fraction 3 and fraction 6 of the ethanolic extract of 'Woja Laka' black rice bran inhibit the growth of liver carcinoma HepG2 cells.

Keywords: apoptosis, black rice bran, cell cycle, cytotoxicity, HepG2

Non infectious risk factors in pediatric sensorineural hearing loss

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Introduction. Pediatric sensorineural hearing loss can cause delay in speech, language comprehension, and daily social communication. The causative factors could be infectious or non infectious. Thus far, the role of infectious risk factors in pediatric sensorineral hearing loss had been proven, therefore, it is obligatory to also prove the role of some non infectious factors in the occurrence of sensorineural hearing loss in children.

Aim. To determine the role of low birth weight, asphyxia, prematurity, and hyperbilirubinemia in the event of sesnsorineural hearing loss in children.

Methods. A case control study design was used in this research, the data were collected from outpatients along with the data from patients' medical records in Dr. Sardjito Hospital, Yogyakarta from January to June 2016. The data collection was obtained until the required sample size were fulfilled. The inclusion criterias in the case group are children age 0 – 5 years old with sensorineural hearing loss. In the control group are children with normal hearing ability. The exclusion criteria are children with history of infectious risk factors and head trauma. Hearing status' were determined by OAE and BERA, based on $\alpha = 5\%$, $\beta = 20\%$; OR assumption = 3,0; there were 19 samples collected for each group, with the total of 38 samples overall.

Results. Based on multivariate analysis, the variables that has meaningful statistic correlations are Low Birth Weight (P: 0,016 with OR 6,43 and CI 95%: 1,25 – 36,21) and asphyxia (P: 0,046 with OR 4,17 and CI 95%: 0,03 – 22,48) these two variables were proved as significant risk factors in pediatric sensorineural hearing loss, whereas the insignificant variables are hyperbilirubinemia (P: 0,382 with OR 2,246, and CI 95%: 0,365 – 13,802) and gestation (P: 0,876 with OR: 0,831 and CI 95%: 0,081 – 8,483)

Conclusion. Low birth weight and asphyxia were proved to be significant risk factors in pediatric sensorineurul hearing loss, whereas prematurity and hyperbilirubinemia were not.

Keywords: non-infectious risk factors, pediatric sensorineural hearing loss

Urinary tract infection in Premature Rupture of Membrane (PROM): a university hospital based study

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Introduction. Premature rupture of membrane (PROM) and preterm PROM (PPROM) are commonly related with poor maternal and perinatal outcomes. Urinary tract infection (UTI) has been known as one of its risk factors.

Aim. To ascertain the frequency and pattern of urinary symptoms as well as the risk factors for UTI in PROM and preterm PROM (PPROM).

Methods. A retrospective study was conducted at Dr. Sardjito General Hospital, Yoyakarta, Indonesia. All pregnancy cases with the history of PROM/PPROM from January to December 2015 were included. The research subjects were obtained from medical records, using the format of basic data collection to identify the risk factors of UTI in pregnancy.

Results. One hundred cases of complicated pregnancy with either PROM or PPROM were obtained. The mean of maternal age, gestational age, and birth weight were 28 ± 5.99 years; 34.05 ± 4.28 weeks; 2170.79 ± 835.447 grams; respectively. Urinalysis were done in 58 patients. The prevalence of bacteriuria was 55.17%. Symptomatic vs asymptomatic bacteriuria showed statistically significant differences ($p < 0.001$, OR = 0.409; CI = 0287-0584). In multivariate analysis using linear regression, maternal age, gestational age, and parity were not directly related to the occurrence of UTI ($p = .367$; $p = .697$; $p = .385$; respectively).

Conclusion. It was revealed that the proportions of symptomatic bacteriuria in pregnancy were significantly higher than asymptomatic. There were no significant differences related to the prevalence of UTI in pregnancy complicated with PROM and PPROM.

Keywords: premature rupture of membranes, preterm premature rupture of membranes, urinary tract infection

The topical application effect of garlic gel on the density of collagen in the wound healing process of white wistar rat gingiva

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Introduction. Garlic is a natural herb which can be used as good alternative treatment because cheap, safe and available thing. Garlic contains *allicin* that has antibacterial and anti-inflammatory effect.

Aim. To investigate the topical application effect of garlic gel against the density of collagen in the wound healing process of gingiva on white wistar rat.

Methods. This study involved 45 male wistar rats, 2 to 2.5 months age who were divided into five groups: basis gel, benzodamine®, and the treatment group which were given by garlic gel dose of 20%, 40% and 80%. Each group would be subdivided into three smaller groups based on the decapitation period, i.e.: 5th, 7th and 10th day after wounded. All rats were wounded on the mandibular labial gingiva, between right and left incisor teeth using punch biopsy (\varnothing 2.5 mm). The extract in gel form were applied on the wound three times a day. The decapitation were done based on their group. The wounded tissue were made into histological slides which *Trichrome Mallory* to assess the density of collagen fibers. The data obtained were tested with the *Kruskal Wallis* test.

Results. The result showed that there are significant difference between positive control and treatments group with the negative control group ($p < 0.05$) and there is no significant difference between positive control group and treatment group.

Conclusion. Conclusion of this research was the topical application of garlic gel increase the density of collagen fibers in the wound healing process of gingiva white wistar rat.

Keywords: collagen, garlic gel, gingival wound healing

DAY 2

Increased hand hygiene compliance for reducing hospital acquired infections at tertiary care hospital: how its impact for clinical outcome?

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Introduction. Hospital acquired infections (HAIs) is the most frequent adverse event that causes the worsening of clinical outcome. Hand hygiene is an effective and simple way to prevent HAIs.

Aim. Evaluate hand hygiene compliance, impact on HAIs and clinical outcome.

Methods. A quasi-experimental study was conducted to evaluate the implementation of the 'WHO multi-modal strategy' that adjusted to the local needs, in intensive care ward and some high-risk units of HAI at Sardjito Hospital from June 2014 to April 2016. All workers who have frequent contact with the patients were observed for their hand hygiene compliance by trained observers. The incidence of HAI and its related impact were documented through active surveillance.

Results. This study involved 186 healthcare workers and 802 patients throughout the before-after intervention study period. There was increasing compliance on accuracy, consistency and sustainability of hand hygiene practices with the independent contribution factors were professional background, hand rub or hand wash practices and 5 moments indicated. The incidence rate of HAI was decreased, while independent risk factors were patients' high risk age (OR 3.7, 95%CI 1.91-5.83), underlying disease (OR 5.88, 95%CI 1.54-34.48) and their invasive intervention (OR 2.48, 95%CI 1.63-3.77). There was increased in LOS, antibiotics usage and mortality rate among HAI's patients significantly. Independent variables associated with the worsening of clinical outcome were elderly (OR 2.12, 95%CI 1.2-3.75), underlying comorbidity (OR 4.63, 95%CI 2.5-8.7), invasive intervention (OR 1.49, 95%CI 1.15-1.94) and HAI (OR 7.73, 95%CI 4.49-13.33).

Conclusion. The increasing of hand hygiene compliance affects the decreased incidence of HAI and improves the clinical outcome.

Keywords: clinical outcome, compliance, HAI, hand-hygiene, health care workers

The diversity of flies (Diptera: Cyclorrhapha) and microbial pathogens that collected at some public hospitals in Province Yogyakarta

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Introduction. Synanthropic fly population surveys are often conducted with respect to enteropathogenic bacteria transmission as well as some gastrointestinal parasites.

Aim. To identify the diversity of medically important species of synanthropic flies and their role as carrier of parasites and enteropathogenic bacteria at some public hospitals in Yogyakarta Province.

Methods. Flies collection was performed during September 2015 to November 2015 in five type B public hospitals in Yogyakarta by using the common insect net. The diversity of synanthropic flies were calculated using Shannon-Weiner index. The flies were identified into genera and species using their characteristic features based on identification key in Manual Nearctic Diptera. These flies were demobilized by freezing (-20°C), washed with sterilized distilled water, and the suspensions homogenised before processing for parasites and pathogenic bacteria on their external body parts. Identification of intestinal parasites uses Detergent Extran 2% and identification of bacteria uses catalase test, coagulase test, and Microbact (Oxoid) methods.

Results. In this study, a total number of 6 species of medically important flies in three families including Calliphoridae (*Chrysomyia megacephala*, *Lucilia* sp.) Sarcophagidae (*Sarcophaga* sp.) and Muscidae (*Musca domestica*, *Muscina* sp.), were collected in non-medical garbage, but only three species found in medical garbage. Shannon-Wiener Index (H') of the flies in non-medicals and medicals garbage were ≤ 1 and ≤ 3 respectively. It was isolated 6 species of opportunistic bacteria (*Burkholderia pseudomallei*, *Klebsiella pneumoniae*, *Acinetobacter baumanii*, *Enterobacter aerogenes*, *Coagulase negative Staphylococcus*, and *Streptococcus alfa*) and 12 species of low pathogenic bacteria on external body of the flies, but no found parasites at all.

Conclusion. The diversity of synanthropic flies in non-medicals and medicals garbage were moderate and low respectively. This also reveals the fact that synanthropic-caught flies, in type B public hospitals in Yogyakarta harbour opportunistic bacteria on their bodies, which can cause diseases. Hence, there is need for improved sanitation in the hospital communities, to prevent epidemics associated with poor sanitary conditions.

Keywords: Calliphoridae, Muscidae, Sarcophagidae, diversity, opportunistic bacteria, synanthropic flies

Comparison of blood group based on bleeding manifestation in pediatric dengue cases

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Introduction. Bleeding manifestation in dengue cases presents due to the impairment of blood homeostasis. Another previous studies mentioned that blood group O have higher bleeding risk because of lower blood coagulation von Willebrand Factor (vWF) and factor VIII (FVIII) compared to non-O blood groups.

Aim. Identify the comparison of blood group based on bleeding manifestation in pediatric dengue cases.

Methods. A cross-sectional study with consecutive sampling in Instalasi Rawat Inap Anak RSUD Dr. Soetomo, Surabaya, Indonesia, during March—September 2016. The study involved 86 dengue pediatric patients with 52 patients that fulfilled the inclusive criteria. The blood group, diagnosis, and the presence of bleeding manifestation data were collected from medical records and analyzed using chi-square test with p-value <0.05 and confidence interval 95%. Blood group was divided based on ABO blood group system and based on blood group O and Non-O.

Results. There was no significant difference between ABO blood group based on the presence of bleeding manifestation ($p=0.579$). There was no significant difference between blood group O and Non-O based on the presence of bleeding manifestation ($p=0.600$).

Conclusion. There is no significant difference between blood group based on bleeding manifestation in pediatric dengue cases. The previous bleeding risk theory based on blood coagulation factor was not proven based on this research.

Keywords: bleeding manifestation, blood group, dengue, pediatric

High expression of FcγII (CD32) receptor on monocytes in dengue infected patients

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Aim. To evaluate the expression of the FcγII receptor (CD32) on monocytes in patients infected with dengue and in healthy subjects.

Methods. This study used a cross-sectional design that included patients infected with dengue (WHO 2011 criteria) who were hospitalized in the RSUP Dr. Sardjito Yogyakarta, RSUD Panembahan Senopati Bantul, RSUD Sleman, and local residents or relatives who met the inclusion criteria and who were selected consecutively. Examinations were completed using a lyse, no-wash method for flow cytometry. Different tests using the unpaired t test/Mann-Whitney/oneway ANOVA were used. Computerized statistical analysis was conducted and was considered to be significant if $p < 0.05$.

Results. Sixty-five study subjects were divided into healthy subjects (24 subjects) and patients with dengue infection (41 subjects). There were no significant differences in Hb and Hct values between the groups, but differences were found in the number of leukocytes, absolute number of monocytes and platelet count ($p < 0.001$; 0.002, and < 0.001 , respectively). The mean expression of FcγIIR (CD32) monocytes in patients with dengue infection (208.77 ± 32.06 MFI) and the healthy subjects (124.03 ± 47.76 MFI) with $p < 0.0001$.

Conclusion. The mean expression of FcγIIR (CD32) monocytes in patients with dengue infection was higher than in healthy subjects.

Keywords: ADE, dengue infection, FcγIIR (CD32) monocyte, flow cytometry

Crusted (Norwegian) scabies

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Introduction. Crusted or Norwegian scabies is a severe variant of scabies characterized by hyperkeratosis and crusting of the skin due to the presence of innumerable *Sarcoptes scabiei variety hominis* mites in the skin which induce profuse proliferation. Crusted scabies is rare, highly contagious, and can mimic other dermatologic disorders.

Aims. Therefore, early recognition and treatment is needed to avoid an outbreak of this disease.

Methods. Here, we report three cases of crusted scabies with different predisposition factors such as systemic lupus erythematosus, immunosuppressive therapy, encephalitis and chemotherapy. Patients came to our Departement with chief complaint of pruritus, red, scaly and crusted skin over their body.

Results. The microscopic examination of the skin scrapings with potassium hydroxide showed numerous mites, eggs and mite feces (scybala).

Conclusion. Since oral ivermectin is not available in Indonesia, patients were mainly treated with several course of topical permethrin 5% cream until complete resolution.

Keywords: crusted, norwegian, scabies

Sensitivity of ChromID® ESBL for screening clinical isolates of extended spectrum β - lactamases (ESBL) producing *Klebsiella pneumoniae*

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Introduction. Extended-Spectrum β -lactamases (ESBL) are enzymes which hydrolyze penicillin, cephalosporin (first generation, second, third), compound of oxymino- β -lactam (aztreonam, but not cephamicyn and carbapenems) but it is inhibited by β -lactamase inhibitor (clavulanate, sulbactam and tazobactam). Increased resistance of ESBL producing *Klebsiella spp* isolates can give rise to worse condition because it can increase morbidity, mortality as well as affects the economic burden.

Aim. Evaluate sensitivity of chromogenic media ChromID® ESBL to screening isolates *K. pneumonia* producing enzyme ESBL.

Methods. This is a diagnostic test study where the media ChromID® is independently and blindly compared with the Double Disc Synergy Test to detect clinical isolate of ESBL-producing *K. pneumonia*. Subjects the study are clinical isolates of *K. pneumonia* identified in the Clinical Laboratory of Dr. Sardjito Hospital which are isolated from clinical samples of patients. Clinical data are obtained from a patient's medical records. Comparison detection by 2 methods next using analyzed statistics 2x2 tables.

Results. Substance examination are 103 isolates, substance isolates of the much urine and pus, with diagnosis infection urinary tractus, kidney failure, Diabetic ulkus and abses. Totally 9 false positive and 2 false negative. The chromogenic media ChromID® ESBL has sensitivity, specificity, positive predictive value, negative predictive value, likelihood ratio for positive result, and likelihood ratio for negative result of 97.4%, 66.7%, 89.2%, 90%, 2.9 and 0.03 respectively.

Conclusion. Methods ChromID® ESBL have sensitivity > 90% and can be used for screening for clinical isolates of ESBL-producing *K. pneumonia*. Anticipate the result of false positif and false negatif, need to consider several factors such severity of the disease, history of the use antibiotics and background diagnosis.

Keywords: ESBL producing *K. pneumonia*, methods ChromID® ESBL, double disc synergy test methods

The life cycle of *Aedes aegypti* larvae in the domestic sewage channel in Semarang

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Introduction. The Dengue Hemorrhagic Fever (DHF) is still being health problem in Semarang City. DHF is transmitted by *Aedes aegypti* as vector infected dengue virus. The vector only live and breed in the clean water. Household often drain their container containing larvae of *Aedes* sp to their sewage channel.

Aim. This research aimed to analyze the difference of the life durability of *Aedes aegypti* larva in the domestic sewage channel.

Methods. This study was an experimental research using post only control group design approach. The subject was *Aedes aegypti* instar III which was breed in entomology laboratory. The sewage measured based on pH index. Data analysis using the Kruskal wallis test and followed by Mann whitney test.

Results. The result of the research showed that *Aedes aegypti* larva could survive and breed as mosquitos in the domestic sewage. The analysis result showed that there were significant differences between the number of larva which become pupa ($p=0.002$), pupa to imago ($p=0.001$) and the number of imago which survived until the second week ($p<0.001$) in the domestic waste water with various pH.

Conclusion. *Ae. aegypti* can survive and finish their life cycle in domestic sewage channel. Household should kill the larvae firstly before throwing it away in that channel.

Keywords: *Ae. aegypti*, breeding places, DHF, larvae

Correlation between SCUBE1 and tissue factor in dengue

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Introduction. Dengue Haemorrhagic Fever (DHF) is still a major problem in tropical countries such as Indonesia. This is due to the high severity that causes death as a result of the difficulty of predicting the likelihood of severity in the critical phase when the patient makes the first visit at the center of public health or clinic that usually comes while still in the febrile phase (1-3 days fever). The degree of severity can be caused by immunologic disorders, hemostasis and vascular endothelial disorders. Immunopathogenesis mechanisms in early viral exposure may activate various proinflammatory cytokines such as TNF- α IL-2, IL-6 and SCUBE-1 activation that increase Tissue factor in critical phase as a marker of the number of thrombus formation processes and extent of endothelial damage.

Aim. This study aims to prove the relationship between SCUBE-1 expression with Tissue factor in Dengue Hemorrhagic Fever (DBD).

Methods. The research was conducted by cross sectional study. The population in this study were patients who came to the Public health center on 2-3 days and were diagnosed with DHF then followed up to day 5-6 in Kuranji District, Padang. Samples fulfilling the inclusion and exclusion criteria were taken as many as 16 people. Expression of SCUBE-1 and Tissue Factor was checked with real time PCR.

Results. Data analysis using Pearson correlation test obtained Level of significance of statistical tests with $P > 0.05$.

Conclusion. That there is no significant relationship between SCUBE1 and Tissue Factor and negative correlation with weak degree ($r: -157$).

Keywords: dengue virus infection, tissue factor, SCUBE1

Antimicrobial activity of *Ficus benjamin* L. extracts as solution for preventing methicillin-resistant *Staphylococcus aureus* activity using the Kirby-Bauer disk diffusion method

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Introduction. Methicillin-resistant *Staphylococcus aureus* (MRSA) associated with difficult-treat infections. MRSA cause diseases from minor skin and soft tissue infections to potentially fatal bacteremia. *Ficus benjamin* L. in Indonesia commonly known as Beringin has potential as antitumor activity and significant antibacterial activity.

Aim. The aim of this research is to know antimicrobial activity of *Ficus benjamin* L. extracts to prevent MRSA activity.

Methods. This research method is done by making *Ficus benjamin* L. extracts and in vitro antibacterial test using agar diffusion method (Kirby-Bauer) with Mueller Hinton for doses of 5%, 10%, 15%, 20%, 25%, 30%, 35%, 40%, 45%, 50%, 55%, 60%, 65%, 70%, 75% and 80%.

Results. The results showed *Ficus benjamin* L. extracts has been able to form a zone of inhibition of growth of MRSA from a concentration of 25%, respectively. Result from this research with Kirby-Bauer disk diffusion method analyze with one way ANOVA shown significant ($P\text{-value}<0, 05$).

Conclusion. Based on this research, it was concluded that *Ficus benjamin* L. extracts has antimicrobial activity as natural solution for preventing MRSA activity.

Keywords: *Ficus benjamin* L., Methicillin-resistant *Staphylococcus aureus* (MRSA), antimicrobial

Mucocutaneous manifestation and the correlation with clinical staging of HIV infection in Sardjito Hospital, Yogyakarta, Indonesia

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Introduction. Mucocutaneous manifestations are indicators of HIV infection which correlates with HIV clinical stages, and can be used in assessing the severity of HIV infection.

Aim. To identify the correlation between clinical staging of HIV infection and mucocutaneous manifestation.

Methods. Data was taken from medical record of HIV patients retrospectively. Analysis of the data used Spearman's rho test to correlate the clinical staging of HIV infection and total manifestation on any subject and then used chi-square test to know the correlation between clinical staging of HIV infection and type of mucocutaneous manifestation.

Results. Out of 309 subjects, 225 (72.8%) were male and 200 (64.7%) were in severe stage. Major risk factor was sexual intercourse (87.4%). The clinical manifestations were skin infections (87.7%), inflammatory dermatoses (39.5%), and skin neoplasms (0.13%). Result showed that severe clinical staging indicate less number of mucocutaneuous manifestations ($p < 0.05$; correlation coefficient -0.265). The risk of inflammatory dermatoses are higher in early clinical staging, ($p < 0.05$; PR 0.582; 95% CI 0.445 – 0.761). The majority of skin infection was oral/esophageal/vaginal candidiasis (60.5%), while the majority of inflammatory dermatoses was maculopapular eruption (11.6%).

Conclusion. There are no any correlation between clinical staging of HIV infection and the cases of skin infection and neoplasm, but there is a significant correlation between clinical staging of HIV infection and inflammatory dermatoses. Early stage of HIV infection have higher risk to inflammatory dermatoses.

Keywords: clinical staging, HIV infection, mucocutaneous manifestation

Profile pharmacokinetics DHA is association with the ABO blood group of Falciparum malaria non complications in Halmahera Indonesia

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Introduction. Malaria remains one of deadly diseases in Indonesia which mainly occurred in Tobelo, North Halmahera. Genetic factor is one of significant factors where the gene actingin protein and enzyme coding influences the drug pharmacokinetics. ABO Blood groups is correlated with severe malaria but not incidence However, no studies have been carried out on the pharmacokinetics of anti-malaria of dihydroartemisinin (DHA), in Indonesia.

Aim. The purpose of this research is to know the kinetic profile of DHA- in the uncomplicated falciparum malaria, the relation of drug content, Cmax (peak content) and parasite clearance with DHA, and its pharmacological effects.

Methods. Random clinical tests were conducted with experimental method to 12 patients RSUD Tobelo, North Halmahera from September to December, 2014. Blood samples were taken sequentially starting from day 0 to day 28, and then thick blood drop, liver function, kidney function, leucocyte, erythrocyte and hemoglobin were tested. The samples were then tested to measure the kinetic concentration of ACT by using LCMS as well as analyzing the parameters of its pharmacokinetics.

Results. The results showed that the kinetic profile of DHA synergized well and it was mutually complementing where the patients were cured without any side effects. The kinetic profile of DHA, O groups (comprised of Ka (1.97 h), A (2.06 h), B (1.45) O groups Cmax (172.20 ng/ml), A (187,14), B (63.35). O groups Tmax (1.33), B (1.25 ng/mL), A (1). O groups $t_{1/2}$ (1.02 h), A (0.96), B (0.48). O groups AUC (421.00 ng/h/L), A (346.21), B (73.5). O groups VD (641.70 L), A (1500.49), B (4945.95). O groups CL (1.398,4 L/h), A (301.89), B (1088.11).

Conclusion. The kinetic profile of the three blood groups abo treated with DHA can be concluded in blood group B occurs high volume of distribution while at C Max (63,35) lower than blood group A and O then on blood group O Clearens is higher (1398.4) than in blood group A and B. Other parameters were not significantly different in the three blood groups.

Keywords: ABO Blood Groups, DHA, Falciparum malaria, pharmacokinetic

Characteristics of the patient, cost of illness analysis, and comparing cost of illness with cost of INA-CBG's ischemic stroke in Yogyakarta private hospitals

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Introduction. Stroke has been the cause of death and mainly disability. It is also the main cause of death according to Riset Kesehatan Dasar (basic health research) 2013. In addition it requires a high cost for maintenance.

Aim. Identification the characteristics of the patient. the cost of illness from direct medical cost and the Indonesian Case-Based Group (INA-CBGs) cost of ischemic stroke for inpatients and outpatients.

Methods. This study employed method of observational analysis with a retrospective and cross sectional. The number of samples reached inclusive criteria of 96 patients with characteristics of age. sex. class of treatment. the length of treatment. comorbid. and complication. Inclusion criteria include JKN patient. ischemic stroke. onset less than 24 hours. The direct medical cost data were calculated by Mann Whitney's descriptive statistic. and Kruskal Wallis calculated the cost of inpatient and outpatient to calculate total cost of illness.

Results. Based on the characteristics and the length of stay and the hospital room class showed significant impact ($p < 0.05$) to the cost of illness for the inpatient ischemic stroke. The amount of ischemic stroke cost was 10.746.502 / episode for 1 year of hospitalization ($n = 96$ patients) with 112 inpatient visits. Moreover. the amount of ischemic stroke cost was 1.068.156 / episodes of visits for 1 year outpatient ($n = 219$). The cost of illness for inpatient indicated a significant difference in class I. meanwhile The cost of illness for outpatient ischemic stroke treatment compared with the cost of INA-CBG's ischemic stroke showed a significant difference.

Conclusion. In general. the budget for stroke treatment from BPJS (health insurance provider) was not sufficient to take care of the treatment for ischemic stroke patients both outpatient and inpatient.

Keywords: cost of illness, direct medical cost, ischemic stroke

Effect of albumin levels on severity of taxanes induced peripheral neuropathy in breast cancer

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Introduction. One of long-term toxicity in cancer treatment is chemotherapy induced peripheral neuropathy (CIPN), causing 40% permanent symptoms and disability. About 80% cancer patients with taxanes chemotherapy experienced taxanes induced peripheral neuropathy (TIPN). Low albumin levels has been shown to be associated with toxicity of chemotherapy. Levels of serum albumin a routine examination prior to chemotherapy, is expected to be predictor of CIPN.

Aim. Determine the effect of albumin levels on severity of CIPN in breast cancer receiving taxanes chemotherapy.

Methods. This is retrospective observational cohort study design. The subjects were breast cancer patients who had completed six cycles of taxanes chemotherapy at Tulip Integrated Cancer Care Dr. Sardjito Hospital. The severity of CIPN was assessed using neuropathy scores NCI-CTC version 3.0. Albumin levels were checked in the Clinical Pathology Departement before undergoing chemotherapy.

Results. In total 50 subjects were included in the study with a mean age 51.52 ± 10.05 years and mean albumin levels 4.07 ± 0.47 g/dL. Bivariate analysis showed results two factors significantly affected the severity of both sensory and motor neuropathy: albumin levels (sensory neuropathy $p=0.002$, motor neuropathy $p=0.002$) and age (sensory neuropathy $p=0.039$ and motor neuropathy $p=0.001$). Multivariate analysis however only showed albumin levels (sensory neuropathy RR=0,015 (95% CI 0,036 to 0,617), $p=0.009$ and motor neuropathy RR=0.170 (95% CI 0.044 to 0.660), $p=0.010$) as an independent factor affecting the severity of CIPN.

Conclusion. This study shows that albumin levels affect the severity of CIPN, wherein the lower albumin levels has more severe CIPN.

Keywords: albumin, breast cancer, CIPN, taxanes

Abnormal electroencephalography as predictor of mortality in meningoencephalitis

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Introduction. The Incidence of meningoencephalitis has been shown to decrease but the mortality remain unchanged. The electroencephalography (EEG) has a role in the management of meningoencephalitis although the imaging modalities has replaced ist position. Abnormality in EEG may appear earlier than in imaging so it is expected to predict mortality.

Aim. To compare the mortality of patients with normal EEG and abnormal EEG results and assess their prognostic role.

Methods. This is an observational prospective cohort study. Meningoencephalitis patients in Dr Sardjito Hospital Yogyakarta from July 2016 until January 2017 underwent EEG examination then divided into abnormal and normal EEG groups. The conditions at the end of treatment are divided into survive and died. This study also assess the type of EEG abnormality associated with mortality.

Results. Thirty-eight subjects were involved with the mean age was 33.61 ± 20.37 year. Twenty-eight subjects (73.7%) had abnormal EEG result. Subject who died were 10 (26.3%) patients. Bivariate analysis showed that abnormal EEG result ($p = 0.028$) and Glasgow Coma Scale (GCS) score ($p = 0.005$) were significantly associated with mortality. Analysis for the type of EEG abnormality found that diffuse slowing ($p = 0.001$) significantly associated with mortality whereas focal slowing and epileptiform were not significant. Multivariate analysis showed neither abnormal EEG result or GCS score were independently predict mortality. Abnormal EEG and GCS score were interrelated in affecting mortality.

Conclusion. Abnormal EEG especially diffuse slowing in meningoencephalitis patients may predict mortality during hospitalization.

Keywords: electroencephalography, meningoencephalitis, mortality, predictor, prognosis

Clinical effectiveness of zoledronic acid in premenopausal early breast cancer with hormone receptor positive: a systematic review

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Introduction. Giving along Zoledronic Acid (ZA) with endocrine therapy has the ability as potential antiresorptive agent and anticancer agent in premenopausal early breast cancer (EBC) patients with hormone-receptor positive.

Aim. To evaluate the ZA clinical effectiveness in premenopausal EBC with hormone receptor positive.

Methods. A systematic review was undertaken. The electronic databases used to identify the relevant studies were PubMed and New England Journal of Medicine. The search terms used were “zoledronic acid” and “early breast cancer”. The review were restricted only in English, publication year from 2006 to 2016, and available in full text.

Results. The electronic database search retrieved 196 articles while only 4 studies fulfilled the eligibility criteria. According to the review, the ZA addition in premenopausal EBC patients with hormone receptor positive may improve the disease free survival (DFS) rate in patients who receive ovarian suppression and endocrine therapy. While in patients who did not receive ovarian suppression, giving ZA did not improve the DFS rate. Giving ovarian suppression and endocrine therapy suppress the reproductive hormone rapidly. It also can prevent bone mineral density (BMD) reduction due to chemotherapy or endocrine therapy.

Conclusion. ZA Administration may improve DFS rates in premenopausal EBC patients with hormone receptor positive who receiving ovarian suppression and endocrine therapy. ZA Administration may also prevent BMD reduction due to the chemotherapy and endocrine therapy.

Keywords: early breast cancer, premenopausal, zoledronic acid

Toxic epidermal necrolysis: a case report in 9-year old girl

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Introduction. Toxic Epidermal Necrolysis (TEN) is a acute and severe reactions of skin and mucosa that can lead to serious clinical outcomes and morbidity. TEN is considered to be rare in children and usually has a fatal outcome due to sepsis.

Case. 9-year old girl, went to Universitas Gadjah Mada (UGM) Hospital with complaint of erythematous, purpuric rash, blister starting from the neck and also involving the inside of the mouth, lips and eyes, and spreading over the entire body. Three weeks before hospital admission, she received combination of drugs valproate sodium, clonazepam, phenobarbital and piracetam. Two weeks after, she developed skin rash and progress to develop TEN. Sodium valproate and clonazepam were discontinued, and intravenous methylprednisolone, prophylactic systemic antibiotics, intravenous immunoglobulin (IVIG), intravenous fluid supplement, antipyretic, special wound care at semi sterile room, and supportive medical care fro TEN were administered. She was discharged from hospital in a stable, good condition.

Discussion. This case suggests that sodium valproate contributed to the development of TEN. Appropriate case management will give excellent result, and reduce long-term complications.

Conclusion. Patients with TEN have significantly higher chance of survival with early recognition of the disease, withdrawal of the offending agent, proper wound management, and infection monitoring. It is important to note that the patient survive from this disease, primarily because patient with TEN are being cared by teams who are able to appropriately manage individuals with large areas of skin loss.

Keywords: case management, children, sodium valproate, toxic epidermal necrolysis

Short children's prevalence and risk factor in infant at Cokrodirjan and Ratmakan's integrated health pos, Yogyakarta City

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Introduction. Short Children is a chronic condition that marks growth restriction due to chronic malnutrition shown by "height for age" HAZ ≤ -2 SD. The prevalence of short children in Indonesia was 37.2% in 2013. The causes of short children can be several factors. short children can affect cognitive abilities and physical health in their growth period and have a risk of growing up with low education, low income and prone to non-communicable diseases. By knowing the cause of the specific factors in each region, it is expected that the prevention and treatment would be optimum.

Aim. The purpose of this research is to recognize short children prevalence and risk factor in infant at Cokrodirjan and Ratmakan's Integrated Health Pos, Yogyakarta City.

Methods. This research is a descriptive, cross sectional research with primary data that have been used are weight and height measurement on infant, questionnaire about infant's eating frequencies, fruit and vegetables eating behavior, exclusive breastfeeding, education and parent's income.

Results. From total 50 infants as the subject studies, 12 of them were stunted (5 male, 7 female) and two of them are aged below 2 years old and ten of them are aged 2-5 years old. There is significant correlation between short children condition and mother's education ($p=0.008$). While correlations between short children and eating frequency, fruit and vegetables eating behavior, exclusive breastfeeding, father's education and parent's income do not have significant relations ($p>0.05$).

Conclusion. The prevalence of short children in infant in Ratmakan and Cokrodirjan villages is still quite high (24%). There was a significant relation between short children condition under 5 years old and maternal education ($p<0.05$).

Keywords: education, infant, malnutrition, short children, stunting

Oral squamous cell carcinoma infected with HPV genotype 16 and 18: a retrospective clinico-pathologic study in Yogyakarta, Indonesia

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Introduction. The incidence of oral squamous cell carcinoma (OSCC) in Asian countries is still high. It has been known that human papilloma virus (HPV) infection is closed relationship with the incidence of this tumor, in addition 90% of OSCC is caused by HPV genotype 16. However, the studies conducted in Indonesia, that focus on the HPV genotype in OSCC is still limited.

Aim. To investigate the prevalence of HPV infection and correlate it with clinicopathologic profile.

Methods. This retrospective study involved 64 formalin fixed paraffin embedded tissue, obtained from 3 anatomic pathology laboratories in Yogyakarta, diagnosed as OSCC in the year of 2011-2015. Extraction of DNA was carried out using commercial kit, subsequently PCR-gel electrophoresis was performed to detect the presence of HPV DNA. Samples with HPV DNA positive subjected to genotyping analysis using a single step PCR followed by reverse line blot. Statistical using bivariate analysis to correlated data of clinicopathologic with HPV genotype.

Results. HPV DNA was presented in 35 of 64 (54,7%) OSCC. HPV genotype 18 detected in 8 of 35 (22,86%) cases and genotype 16 detected in 3 of 35 (8,57%) cases. The female and male ratio in HPV related OSCC was 1:1,9. HPV infection was found in 26 of 45 (57,77%) patients with age 55 years and older. HPV DNA was presented in 22 of 37 (59,5%) tongue samples and in 28 of 49 (57,1%) samples with well differentiated histopathologic feature.

Conclusion. This investigation show closed relationship between OSCC and HPV genotype 16 and 18.

Keywords: oral squamous cell carcinoma, HPV genotype 16, HPV genotype 18, Yogyakarta

Rhabdoid amelanotic melanoma of gingiva: histological challenge of an unusual variants of malignant melanoma

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Introduction. Amelanotic melanoma of oral mucosa is an uncommon lesion and present a diagnostic challenge due to its clinical presentation and varied histopathology appearances particularly lack of pigmentation. Primary rhabdoid amelanotic melanoma is one of rare variants and usually confirmed by histopathology and immunohistochemistry study of its metastatic site.

Case Description. A 60-year-old Indonesian woman presented with a non-pigmented tumor of gingiva extending from 34-37 region. The tumor had been detected since a year prior to admission, measured approximately 2 cm in diameter without specific colorization. Multiple cervical and axillary lymphadenopathy were also noticed. No other tumor was found elsewhere. An incisional biopsy of the gingiva was first performed followed by FNAB of axillary lymph node and the removal of nine axillary lymph nodes. Immunohistochemically, specimen from gingiva was positive for S100 and negative for P40 and HMB45. Axillary lymph nodes' specimen diffusely expressed HMB45, S100 and Vimentin.

Discussion and Conclusion. Based on cytology and histological presentation of gingiva and axillary lymph node, differential diagnosis included amelanotic melanoma, poorly differentiated squamous cell carcinoma, high grade myoepithelial carcinoma and plasmacytoma was made. Immunohistochemistry plays an important role and taking into consideration the S100 positivity of the primary lesion and strong expression of HMB45, S100 and Vimentin of the metastatic site, we considered it as a rhabdoid amelanotic melanoma. This case was very challenging in histopathological diagnosis and consider it has poor prognosis, it's important to put it as one of differential diagnosis whenever non-pigmented lesion was found in oral cavity.

Keywords: amelanotic, different expression of HMB45, melanoma, rhabdoid

Prognostic factors of histopathological findings for liver cirrhosis in biliary atresia patients following Kasai procedure

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Introduction. Biliary atresia (BA), characterized by fibroinflammatory obliteration of extrahepatic biliary tree, is most common cause of cholestasis in neonates. Many histopathological studies of BA have been reported over the world. However, there is a great paucity of knowledge about BA histopathology in South East Asia.

Aim. To describe hepatic histopathological findings and associate them with incidence of cirrhosis in Indonesian BA patients.

Methods. We reviewed histopathology of BA patients underwent Kasai procedure from August 2012 to September 2016 at Dr. Sardjito Hospital, Indonesia.

Results. We involved 25 BA patients of whom 15 and 10 were males and females, respectively. The mean age at Kasai procedure was 118 ± 57 days (range, 52 – 268 days). There were 14 (56%) and 11 (44%) BA patients with and without cirrhosis, respectively. Portal fibrosis, bile duct proliferation, and cholestasis showed a strong association with cirrhosis ($p<0.001$), but portal inflammation and giant cell transformation did not. The BA patients with severe bile duct proliferation were 58-fold having cirrhosis than those with mild/moderate bile duct proliferation ($p<0.001$), while the BA patients with severe cholestasis were 60-fold suffering cirrhosis than those with absent/mild/moderate cholestasis ($p<0.001$). Although not statistically significant ($p=0.21$), the patients with severe portal inflammation tend to get cirrhosis 4.5-fold than those with mild/moderate portal inflammation.

Conclusion. There is a significant association between portal fibrosis, bile duct proliferation, and cholestasis with cirrhosis in Indonesian BA patients. The high incidence of cirrhosis among BA patients might imply the necessity of early diagnosis of BA.

Keywords: biliary atresia patients, histopathological, kasai procedure, liver cirrhosis, prognostic factors

Relationship between environmental sanitation and personal hygiene with incidence of intestinal helminth infections among children under five years old in Kampung Cokrodirjan and Ratmakan

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Introduction. Intestinal helminth infection diseases is one of most common infection affects children under five years old and school-age children. The main cause of high incidence of intestinal helminth infections are poor environmental sanitation and personal hygiene. Kampung Cokrodirjan and Ratmakan is a village with dense population that located along side of the Code river in Yogyakarta that have high risk factors of intestinal helminth infections.

Aim. To know the relationship between environmental sanitation and personal hygiene with incidence of intestinal helminth infections among children under five years old in Kampung Cokrodirjan dan Ratmakan.

Methods. A cross-sectional design with observational analitic descriptive study was used in this study. Data collection was done by examining stool samples in 47 children under five years old and interview their parents in each of the two Posyandu in Kampung Cokrodirjan and Ratmakan.

Results. The results of this study showed the incidence of intestinal helminth infection is 2,1%. Bivariate analysis showed the value of the variable relationship between the incidence of intestinal helminth infections with environmental sanitation $p = 0,632$, the habit of cutting nails $p = 0,706$, hand washing with soap and water $p = 0,015$, and the habit of wearing footwear $p = 0,203$.

Conclusion. There is a significant relationship between the behavior of washing hands with water and soap with the incidence of intestinal helminth infection, whereas no significant correlation between environmental sanitation, the habit of cutting nails, and the habit of wearing footwear with the incidence of intestinal helminth infections among children under five years old in Kampung Cokrodirjan and Ratmakan.

Keywords: children under five years old, environmental sanitation, intestinal helminth infection, personal hygiene

The overview of health promoting schools-primary schools implementation in Yogyakarta City

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Introduction. The implementation of Health Promoting Schools (HPS) is aimed to enhance the quality of education and the student's academic achievements. The availability and the quality of the infrastructures become one of the aspects that affect the implementation of HPS.

Aim. To acknowledge the overview of the HPS implementation in Yogyakarta City.

Methods. This research is a descriptive research using cross sectional approach that involves 62 headmasters or the HPS advisor. It uses assessment questionnaire of Healthy School Competition from the Central HPS Advisor Team (2007) and observation sheets. The data processing uses univariate analysis to generate frequency distribution and percentage of each question.

Results. According to the total observation points from each school, it is shown that the number of schools with good quality of HPS are 24 (38.7%), 35 schools (56.5%) for medium quality, and 3 schools (4.8%) for low quality. The field observation of the elementary schools shows that 38 schools (61.3%) have low quality of ventilation and toilet lighting, and 42 schools (67.7%) do not have their own guidance and health counselling rooms. Meanwhile, the state of the water in 58 schools (93.5%) and sewerage in 50 schools (80.6%) is categorized into good quality. According to the correspondents, the implementation of HPS has 2 major barriers, that is the human resources (19; 30.6%) and infrastructures (18; 29%).

Conclusion. The dominant category for the implementation of HPS is medium category, that is affected by the human resources and the availability of infrastructures.

Keywords: headmaster, health promoting schools, HPS advisor

Development of intention measurement tool to prevent needle stick injury in hospital

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Introduction. Hospital professions have high risk for safety and health, it can decrease performance of all employees. Source of danger such as nosocomial infections from lacerated or punctured injury (needle sticks injury).

Aim. Development intention measurement questionnaire to prevent hazards due to accidents caused by sharp and pointy objects.

Methods. The research object described as TACT (Target, Action, Context, and Time) of theory planned behavior (TPB). All employees of nursing in particular hospital Yogyakarta as target related to high risk of needle stick injury. Action defined as performance to do the main task and support activities in implement the standard procedure. The context of behavior including perception of attitude, norm and behavioral control to support Occupational Safety and Health (OSH) in the hospital. Time is period during do the tasks in the hospital associated with potential risk of danger caused by needle stick injury.

Results. The result of questionnaire test with 50 nurses as respondent resulted in validity and reliability of the instrument. From 102 questions, 77 item questions are considered valid from the value of $r > r_{\text{table}} (0,279)$, 25 item questions are considered invalid, this is seen from the value of $r < r_{\text{table}} (0,279)$. The instrument reliability test resulting from Cronbach's Alpha value of 0.854 indicating that the instrument is reliable.

Conclusion. Intention provoke to obey the standard procedures and activities of OSH. Based on individual and organizational perception of health and safety climate, intention will be appeared on the standard operating procedure of prevention infectious diseases caused by sharp and pointy objects injury in the hospital.

Keywords: climate, intention, OSH, performance

Internalization process for a sustainable Rational Use of Medicine (RUM) policy implementation

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Introduction. Irrational drug use is highly associated to drug resistance. Therefore, government's policy is needed to protect the community. Many interventions are proven effective in improving drug use but could not survive for long after implementation. RUM programme in Gunungkidul and Sleman had been sustained for 20 years.

Aim. Exploring the internalization of RUM implementation in both regencies.

Methods. This is a non-experimental single case study. Quantitative and qualitative data were collected to obtain information the indicators and implementation process of RUM. Quantitative data refers to RUM indicators from WHO 1993, consisting of poly-pharmacy, percentage of antibiotics use, and percentage of injection use. Qualitative data were analyzed descriptively; the events in each district were arranged in chronological order.

Results. Implementation of RUM in Gunung Kidul and Sleman Regencies sustained for a long time. Antibiotic use profile in Gunung Kidul Regency in 1994 – 2014 decreased from 52.1% to 24.1%; poly-pharmacy decreased from 4.2 to 2.89, and injection use decreased from 68.05% to 0%. Antibiotic use profile in Sleman Regency in 1998 – 2014 decreased from 44.31% to 20%, poly-pharmacy remained at 3, and injection use decreased from 4.9% to 0.18%. Implementation of RUM in both regencies was started with *top down* approach accompanied by continuous monitoring and evaluation. Meaning that the district's health policy makers were committed to internalize the RUM programme.

Conclusion. Internalization RUM programme is essential to improve for antibiotics use. Policy maker's commitment is the key success for RUM implementation.

Keywords: commitment, internalization, policy maker

Determinants of public health center staffs attitude in Bantul District Yogyakarta Special Region toward public health center as 100% smoke free area year 2012

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Introduction. Tobacco smoke has bad impacts to health either for active or passive smoker. Attitude and perception to tobacco control have effective influence to smoking behavior in adult. Health professional is the role model for community. Health facility should be able to be role model to develop smoke free area social norm thus this research is important to be done.

Aim. Identification of factors influencing Public Health Center (PHC) staffs attitude in Bantul District toward PHC as 100% smoke free area.

Methods. This research used secondary data of Quit Tobacco Indonesia. Descriptive, bivariabel, and multivariable for cross-sectional study have been done.

Results. Best model consists of perception, smoking status, and knowledge. Perception, smoking status, and knowledge have high impact either practically or statisitically. This model is inline with parcimonial model. Individual objecting to environmental tobacco smoke exposure, having status as non-smoker or former-smoker, and having good knowledge about bad impact of environmental tobacco smoke, has better attitude about public health center as 100%-smoke free area.

Conclusion. Effort to develop attitude supporting public health center to become 100% smoke free area could be done by changing perception, smoking status, and knowledge about bad health effects of environment tobacco smoke. Perception represents 36,7% smoking status influence and 21,9% knowledge influence.

Keywords: attitude towards smoke free area, smoke free area, smoking behavior, tobacco control

Developing instrument for estimation of Willingness-To-Pay per Quality-Adjusted Life Year (WTP per QALY) as cost-effectiveness threshold in Indonesia

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Introduction. A study for estimating willingness to pay per quality adjusted life year (WTP per QALY) as cost effectiveness threshold for pharmacoeconomic study in Indonesia is gaining urgent. To the best of our knowledge there have been neither study for estimating WTP per QALY in Indonesia nor such instrument are available.

Aim. To develop instrument for estimating WTP per QALY as cost-effectiveness threshold in Indonesia.

Methods. We adopted instrument for estimating WTP per QALY used in previous study in Thailand. We modified the instrument by translating into Bahasa Indonesia language and adjusting several critical points to meet it suitable with Indonesia setting. We conducted focus group discussion (FGD) involving 7 experts consist of clinician, experts in pharmacy practice, pharmacoepidemiology, healthcare costing, and pharmacoeconomics.

Results. We developed 3 versions of instrument for estimating WTP per QALY in Indonesia. The 3 versions differ in types of health intervention purpose which are for moderate treatment, extending life, and life saving. Each version of instrument consists of 3 parts of questionnaires: socio-demographic information, utility measurement, and WTP measurement. In part of socio-demographic information, we put 13 questions; in part of utility measurement, we employed standardized EQ-5D-5L in Bahasa Indonesia language version; lastly in part of WTP measurement, we applied contingent valuation method using 3 branches bidding game format with values range between 0.05 to 1.2 Indonesia's GDP and combined with open-ended question.

Conclusion. An instrument for estimating WTP per QALY as cost-effectiveness threshold in Indonesia have been developed. Further step is validation and piloting questionnaire before employing for large survey.

Keywords: WTP per QALY, Indonesia, instrument

Posyandu Remaja as mean of community-based health screening for adolescent in MAN 2 Bantul, Yogyakarta

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Introduction. Adolescent is transition period from childhood to adulthood. Adolescent is mostly perceived as healthy, although it's highly misleading. Mortality and morbidity of adolescent are due to preventable diseases like HIV, lower respiratory tract infection, unipolar depressive disorders, iron-deficiency anemia, and diarrheal disease. Most of these diseases can have better outcome when detected earlier, and Posyandu Remaja is self-empowered community-based screening for these diseases.

Aim. Posyandu Remaja as early detection of any abnormality in Nutrition, Reproductive, Dental and eye health in adolescent.

Methods. Posyandu Remaja is prepared by student in MAN 2 Bantul and student in 5 health field study (Medical Doctor, midwifery, dentistry, Health Nutrition and Dentistry), result of examination will be noted in medical record and any abnormalities will be recorded and collected. Before going to Posyandu Remaja the participant is asked to fill general and psychology screening form. The data is presented descriptively.

Results. The participant of Posyandu Remaja is 82 participant, which is consisted of 31 male and 51 female. There are 21 (26%) underweight (<18.5) and 7 (9%) overweight (>25), 10 (14%) anemia, 40 indication of reduced distance vision, and 7 healthy dental condition (9%). There are 46 participant (56%) have certain condition in general screening form and 52 participant (63%) have increased domain in psychology screening form.

Conclusion. Posyandu Remaja can act as community-based early detection for diseases in adolescence, although the effectiveness and standardization of this novel method still needs to be investigated.

Keywords: adolescent, community, interprofessional, Posyandu Remaja

Eating breakfast had association with technical skills of vocational high school students

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Introduction. A limited number of studies had been performed on nutritional factors and learning ability in terms of skills, rather than academic (cognitive), especially in vocational high school (SMK) students.

Aim. To identify the association between nutritional factors with technical skills of vocational high school students.

Method. A cross-sectional study was conducted on 100 vocational high school students specialized in automotive technique in Sleman District, Jogjakarta Special Province. Vocational skills were measured from grades of practical examination. We measured weight and height to determine nutritional status (BMI/age) using validated anthropometric instruments. Data of socio-demographic factors and frequency of eating breakfast were collected using questionnaire while nutrients intake was assessed using Semi Quantitative Food Frequency Questionnaire (SQFFQ). Chi-square test on significance level of 0.05 was employed to analyze the data.

Results. A small proportion of the students had adequate intakes with regards to energy (23%), protein (24%), fat (27%), carbohydrate (30%), calcium (21%) and iron (42%), although most of the students (67%) had normal nutritional status. Furthermore, half of the subjects (49%) obtained good grade on practical exams. There were no association between energy and nutrient intakes as well as nutritional status with vocational skills ($p>0.05$). However, breakfast frequency and occupational status of the parents (father and mother) had association with vocational skills ($p=0.010$, $p=0.030$ and $p=0.031$, respectively).

Conclusion. Eating breakfast was a nutritional factor that had association with technical skills of vocational high school students.

Keywords: breakfast, intake, nutritional status, technical skill, vocational school

A literature review on cost-effectiveness of dual antiplatelet therapy with prasugrel versus clopidogrel in patient of acute coronary syndromes

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Introduction. Current guidelines recommend a combination of clopidogrel and aspirin for management of patients who have experienced an acute coronary syndrome. Prasugrel as a new antiplatelet agent have been recently approved, may be used as an alternative in the dual antiplatelet therapy.

Aim. To determine cost-effectiveness of prasugrel compared to clopidogrel as aspirin concomitant in dual antiplatelet therapy.

Methods. Literature review was performed in PubMed and ScienceDirect database with inclusion criteria: acute coronary syndrome, cost-effectiveness, dual antiplatelet therapy, prasugrel versus clopidogrel. We also perform a search of the journal through the study of the bibliography of selected journals.

Results. The primary endpoint occurred in the model in 11.28% of clopidogrel patients compared with 8.87% of prasugrel patients, with the reduction driven primarily by myocardial infarction (8.49% for clopidogrel vs. 6.43% for prasugrel) however total bleeding events were higher at 12 months in the prasugrel group (4.81% with prasugrel vs. 3.64% with clopidogrel). Treatment with prasugrel versus clopidogrel for a median of 14.7 months was associated with lower costs during the initial 30 days and from 31 days throughout the rest of the trial follow-up period. Prasugrel was associated with life expectancy gains of 0.102 years primarily because of the decreased rate of nonfatal myocardial infarction.

Conclusion. Among patients with an acute coronary syndrome undergoing percutaneous coronary intervention, treatment with prasugrel versus clopidogrel is an economically attractive treatment strategy.

Keywords: acute coronary syndromes, clopidogrel, cost-effectiveness, dual antiplatelet therapy, prasugrel

Association between malaria infections and air temperature at Kulon Progo District, Yogyakarta

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Introduction. Malaria is still major public health issue in Indonesia. Kulon Progo, District remain high endemic area, which have significant number of malaria cases for more than the last ten years. While previous study suggests that transmission of malaria associated with climate conditions, it is not yet known whether also the case in Kulon Progo District.

Aim. The aim of the study was to analyze the association between malaria cases and climate data i.e. air temperature and to evaluate spatial-temporal distribution malaria cases in Kulon Progo District, Yogyakarta.

Methods. This is ecological study, which analyze the malaria cases in relation with climate data spatial approach. A total of 1439 malaria cases was collected during period 2005-2015. Time/trend, bivariate analysis, and spatial analysis were performed.

Results. The results show that air temperature *lag 0* ($p = 0.0000$; $r = 0.5225$), air temperature *lag 1* ($p = 0.0009$; $r = 0.2850$), air temperature *lag 2* ($p = 0.0329$; $r = 0.1858$), are related to the malaria case. Spatial analysis and time/trend analysis also show direct relationship pattern between malaria and air temperature in Kulon Progo during period 2005-2015, with exception in the year 2006 and 2012.

Conclusion. This study conclude that there is relationship between malaria cases with air temperature. Spatial analysis approach is important for early alert system, to decrease morbidity and mortality due to malaria cases.

Keywords: air temperature, Kulon Progo, malaria, spatial analysis, Yogyakarta

Is it true air humidity relating to the case of dengue in the Kendari City?

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Introduction. *Dengue Hemorrhagic Fever* (DHF) is still major public health issue in indonesia. Kendari city remain high endemic area, which have significant number of *Dengue Hemorrhagic Fever* (DHF) case for more than the last ten years. While previous study suggests transmission of *Dengue Hemorrhagic Fever* (DHF) associated with climate conditions, It is not yet known whether also the case in Kendari City.

Aim. The aim of the study was to analyze the association between *Dengue Hemorrhagic Fever* (DHF) cases in climate data i.e. air humidity.

Methods. This is the ecological study, which analyze the DHF case in relation with climate date temporal approach. A total of 3.409 DHF case was collected during period 2005-2015. Time/trend and bivariate analysis were performed.

Results. The results show that air humidity lag 2 ($p = 0,0114$; $r = -0,2214$) and air humidity lag 3 ($p = 0,0000$; $r = 0,4124$) are related to the DHF case. Meanwhile air humidity lag 0 ($p = 0,1066$; $r = 0,1411$) and air humidity lag 1 ($p = 0,9872$; $r = 0,0019$) are not related to the DHF case. Time/trend analysis also show direct relationship pattern between and air humidity in Kendari City during period 2005-2015, with exception in years 2013.

Conclusion. This study conclude that there is relationship between case Air humidity with increased incidence of DHF. Air humidity can be predictor DHF cases in population.

Keywords: air humidity, climate, dengue hemorrhagic fever, temporal

Preliminary study of Nontuberculous Mycobacteria (NTM): its biofilm formation, sliding motility, and antibiotic susceptibility pattern

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Introduction. Nontuberculous mycobacteria (NTM) are ubiquitous organisms commonly found in the environment. However, recently it is considered as emerging global interest since the incidence increase significantly.

Aim. Nontuberculous mycobacteria (NTM) are ubiquitous organisms commonly found in the environment. However, recently it is considered as emerging global interest since the incidence increase significantly.

Methods. NTM strain included in this study were 10 NTM clinical isolates obtained from TB laboratory, Microbiology Departement, Faculty of Medicine UGM Yogyakarta. Biofilm forming capability was detected by using biofilm development assay in microtiter plate and staining with 1% crystal violet. Sliding motility assay was performed on motility medium, consisting of Middlebrook 7H9- 0.3% agar without supplements. Antibiotic susceptibility pattern was investigated by macrobroth dilution technique according to CLSI methods.

Results. Our study revealed that 7 out of 10 NTM isolates produced biofilm strongly, while 1 isolate demonstrated as moderate biofilm former strain, and the remaining 2 isolates did not produce biofilm on polystyrene substrate. Meanwhile, biofilm-former strain are able to slide on semisolid agar, and 2 non-adherent NTM isolates did not have ability to perform sliding motility. A good correlation was found between mycobacterial sliding and biofilm assembly of NTM isolates. Clarithromycin has been shown as the most effective antibiotic against NTM isolates tested, which was active against 50% of all isolates, followed by gentamycin (40%), while kanamycin, levofloxacin, and ofloxacin showed the same level of potency (30%). Ceftriaxone was only able to inhibit the growth of NTM isolates about 20%. Furthermore, cotrimoxazole and amoxicillin had poor in vitro activity against NTM species, since all of NTM tested were resistant against both antibiotics.

Conclusion. Sliding motility and biofilm-producing capacity were linked among clinical strains of NTM isolates. Most of NTM isolates were resist against antibiotic tested.

Keywords: antibiotic susceptibility, biofilm forming ability, NTM, sliding motility

Up-regulation of SCUBE1 in dengue virus infection

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Introduction. Early recognition of dengue virus infection during febrile stage is necessary to prevent the secondary infection and hospitalization. Signal peptide-CUB- (complement C1r/C1s)-EGF (epidermal growth factor)-like domain-containing protein 1 (SCUBE1) is secreted in activated platelet under inflammatory condition and might play a role in pathogenesis of severe disease progression.

Aim. Identification of SCUBE1 as predictive marker in dengue virus infection.

Methods. Blood samples were collected in febrile stage (day-2 or day-3 fever) from thirty-three patients (17 with dengue fever and 16 healthy) who met the inclusion and exclusion criteria for dengue virus infection according to World Health Organization (WHO) classification were subjected to SCUBE1 gene analysis using real-time reverse transcription quantitative PCR (RT-PCR).

Results. Laboratory findings showed that among 17 patients who were detected for dengue virus infection, platelet count was significantly lower in day-6 than those in day-3. The most notable finding in our study was up-regulation of novel SCUBE1 gene in infected patients (8.9 ± 3.1 -fold) compared to healthy, implicating for SCUBE1 involvement in dengue virus infection.

Conclusion. New marker of platelet activation, SCUBE1 appears to play a role in dengue virus infection and might represent a promising marker for early detection of dengue virus infection.

Keywords: dengue virus infection, platelet activation, SCUBE1

The Toxoplasma Rubella Cytomegalovirus Herpes (TORCH) infection risk factor of sensoryneural hearing loss in children

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Introduction. Sensoryneural hearing loss in children can cause delays in speech language, affect the social communication and development of children. So important in early detection of hearing loss in children. Sensoryneural hearing loss in children can caused by congenital and acquired factor (infectious and non-infectious). Based on Joint Committee on Infant Hearing (JCIH) there are several risk factors for disorders sensoryneural hearing in children.

Aim. To determine the risk factors for the most significant in the sensoryneural hearing loss in children.

Methods. Case-control design. Data retrieved from medical record at the hospital Dr. Sardjito Yogyakarta between January 2014 until April 2015. Inclusion criteria for case group are children aged 0-5 years, with sensoryneural hearing loss (SNHL). The control group is normal hearing children. Exclusion criteria for both groups data is incomplete data. Diagnose criteria based on OAE (Oto Acustiac Emission) and BERA (Brainstem Evoke Response Audiometry) examination results.

Results. There were 31 samples in case group and 31 samples in the control group. In the case group obtained 14 samples detected TORCH (Toxoplasma Rubella Cytomegalovirus Herpes) infections with OR 11.94 (95% CI: 2.41 to 59.02), 10 samples detected hyperbilirubinemia, with an OR of 0.75 (95% CI: 0.26 to 2.14), 14 samples were born with low birth weight with an OR of 2.36 (95% CI: 0.81 to 6.91), 14 samples were born with neonatal asphyxia with an OR of 2.28 (95% CI: 0.94 to 8 , 47), 9 samples were born preterm with an OR of 1.70 (95% CI: 0.52 to 5.55). Based on multivariate analysis found TORCH infection is a significant risk factor for the incidence of sensoryneural hearing loss in children with OR 15.63 (95% CI: 2.84 to 85.95).

Conclusion. Children with TORCH infections is statistically significance risk factors the incidence of sensoryneural hearing loss with OR 15.63 compared to non-infectious factor risk with in children.

Keywords: child, infection risk factor, sensoryneural hearing loss

Management of misaligned crown fracture with external root resorption using Mineral Trioxide Aggregate (MTA) and custom cast post and core restoration

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Introduction. Crown fracture is the most commonly reported traumatic injuries in the permanent dentition. One of the unfavorable response to trauma is the development of external root resorption (ERR). Injuries may also cause tooth angulation changes so it should be treated with a customized cast post and core to produce better aesthetic result and to obtain sufficient compressive strength.

Aim. The case report describes the use of mineral trioxide aggregate (MTA) as an apical plug to promote periapical healing of an open apex and the use of custom cast post and core to correct the tooth angulation.

Case report. A 23-year-old male patient came to RSGM Prof. Soedomo with a chief complaint of a fractured and labial misaligned of upper right central incisor due to trauma 10 years ago. Patient expressed his unwillingness to get orthodontic therapy. Percussion and palpation test showed no discomfort or pain. There was no mobility noticed. Radiograph showed periapical radiolucency and open apex.

Case management. Tooth was treated with calcium hydroxide dressing and MTA apical plugs were placed in the apical portion of canals. Tooth was restored with custom cast post and core to correct the angulation followed by the placement of a porcelain crown.

Conclusion. MTA can be used as apical plug for sealing open apex caused by ERR combined with custom cast post and core for other option for misaligned tooth.

Keywords: external root resorption, mineral trioxide aggregate, custom cast post and core, tooth angulation changing

The utilization of Voluntary Conseling and Testing (VCT) clinic on Man who have Sex with Man (MSM) in Jember Regency

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Introduction. The increasing of HIV prevalence in MSM community serve as a warning that needed the goverment support. AIDS prevention program in MSM population has implemented various methods to change high-risk behavior. However, HIV prevalence in MSM populations is still rising. Beside they still had big stigma and discrimination which caused Low access to adequate health services.

Aim. This research aimed to analyze the utilization of Voluntary Counselling and Testing (VCT) by MSM in Jember Regency.

Methods. This research used descriptive analitical method using secondary data derived from the visit report on VCT clinic of the Puger Public Health Center Jember in 2013-2014. Population and sample of this study was the MSM already utilizing the services at VCT Clinic of Puger Public Health Center during 2013-2014. The collected data was then processed and analyzed descriptively using univariat statistic and doing logical thinking associated with the concept of health care provision on the HIV and AIDS in the MSM community. A literature review was also conducted to strengthen and sharpen the data analysis. Puger Public Health Center Jember regency was selected as a place of the study because it is the first referral health center for STI and HIV and AIDS services in the Jember regency.

Results. The result of the research showed that the total visits of MSM to the VCT clinic of Puger Public Health Center were 23 visitors in 2013 and increased to 114 visitors in 2014. Most of them visited VCT clinic aged more than 25 years in 2013 and 20-24 years in 2014. There were 21,7% was diagnosed HIV positive in 2013 and 8,8% in 2014. Based on the residence of MSM, Ambulu districts is the highest in 2013, and changed at Jenggawah int 2014. There was an increase of MSM visits to Puger VCT clinic during period of 2013-2014. There was the alteration by the age, that the visitors was younger than the last year, and most of them live in Ambulu District and become different in the 2014 was from Jenggawah. But there was the derivation of HIV positive diagnosed.

Conclusion. There is an increased MSM visits to Puger VCT during 2013-2014, with the origin of the highest residence are from Ambulu to Jenggawah District, with an age range changes to a younger age, but decreased in the diagnosis of HIV positive. t is needed education and promotion program on MSM community to increase the

visit coverage of Puger VCT clinic, and Puger VCT clinic services to be more innovative through the medium of film, card games, campaigns through social media and in providing friendly service to the MSM community, that is maintaining the confidentiality and comfort for MSM.

Keywords: HIV/AIDS, MSM, the utility, VCT clinic

Detection of polymorphism on voltage-gated sodium channel gene of Indonesian *Aedes aegypti* associated with resistance to pyrethroids

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Introduction. *Aedes aegypti* is a vector of several pathogens including dengue virus. Vector control is an effective way to break the transmission but unfortunately constant use of insecticides ultimately causes vector resistance. Pyrethroids have been used for about 15 years to combat *Ae. aegypti* in Yogyakarta, Indonesia. Single amino acid substitutions in the voltage-gated sodium channel associated with pyrethroid resistance constitute one of the main causative factors of knockdown resistance (kdr).

Aim. The aim of this study is to detect resistant status to cypermethrine and polymorphism on the voltage-gated sodium channel gene of *Ae. aegypti* from 2 dengue endemic areas in Yogyakarta Special Region (Yogyakarta city and Sleman district).

Methods. Pyrethroid resistance in *Ae. aegypti* mosquitoes was detected by using CDC Bottle Bioassay tests. To detect the polymorphism on the voltage-gated sodium channel gene of *Ae. aegypti* analyses were conducted by using PCR with primers AaSCF1 and AaSCR4 for S989P, I1011M (or V), L1014F sites, and AaSCF7 and AaSCR7 for the F1534C site.

Results. According to bioassay tests, the results for *Ae. aegypti* from Yogyakarta city (93% mortality) and Sleman district (88% mortality) suggest the possibility of resistance to cypermethrin. We observed polymorphism on voltage-gated sodium channel gene on site F1534C.

Conclusion. The findings provide early evidence that the use of cypermethrin (pyrethroids) in Yogyakarta city and Sleman district, Yogyakarta Special Region, Indonesia is reducing its effectiveness to control *Ae. aegypti*. Recommendations include additional tests for confirmation.

Keywords: *Aedes aegypti*, bioassay, cypermethrin, dengue virus, Yogyakarta

The correlation between occurrence of dental caries and oral health-related quality of life of elderly population in Daerah Istimewa Yogyakarta

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Introduction. Dental caries is the most common infectious disease affecting humans. Based on Riskesdas in 2013, prevalence of dental caries in Indonesia in 2013 increased up to 53.2% compared to 43.4% in 2007. One of the two most increasing prevalence occurred in population of more than 65 years. This disease might affect oral health-related quality of life (OHRQoL) since it causes pain, physical and psychological discomfort.

Aim. To study the correlation between occurrence of dental caries and OHRQoL of elderly population in Daerah Istimewa Yogyakarta (DIY).

Methods. Occurrence of dental caries and OHRQoL measurements were determined using Decay-Missing-Filling Teeth (DMFT) Index and Geriatric Oral Health Assessment Index (GOHAI) instruments, respectively for 118 elderly (60-84 yrs; F: 73, M: 45) in DIY. The data then were classified into very low, low, moderate and high DMFT and low, moderate and high GOHAI. Spearman's rank correlation test was conducted to determine correlation between occurrence of dental caries and OHRQoL.

Results. Mean scores of DMFT Index and GOHAI were 16.61 ± 7.16 and 47.97 ± 9.03 , respectively. Low, moderate, high and very high DMFT Index were experienced by 1 (0.85%), 2 (1.69%), 4 (3.39%) and 111 (94.07%) of 118 elderly, respectively. Low, moderate and high GOHAI were experienced by 71 (60.17%), 25 (21.19%) and 22 (18.64%) of 118 elderly, respectively. Spearman's rank correlation test showed that the correlation coefficient (r) was -0.265 ($p=0.004$).

Conclusion. There is a negative moderate significant correlation between the occurrence of dental caries and OHRQoL of elderly population in DIY.

Keywords: correlation, DMFT, elderly, GOHAI, OHRQoL

Ten years trend of dengue research: a bibliometric analysis of publications in Indonesia and Southeast Asian countries

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Introduction. Dengue fever is a mosquito borne disease with high incidence over 128 countries. WHO estimates 500,000 people with severe dengue hospitalized annually and 2.5% of those affected died. Indonesia is a hyperendemic country for dengue with increasing number of cases in the last decade. Unfortunately, growth of Indonesian dengue research is unknown.

Aim. The aim is to depict bibliographic trends and knowledge structure of dengue publications in Indonesia relative to that Southeast Asia (SEA) from 2007-2016.

Methods. Bibliographic data were collected from Pubmed filtered by Indonesia country affiliation. Annual growth rate of publication was measured and compared with neighborhood countries in the SEA region. Network analysis was used to visualize emerging research issues.

Results. About 10,908 dengue related documents were found in Pubmed globally. About 1,625 documents were originated from SEA region, of which Indonesia contributes 5.90%. The publication growth rate in Indonesia, however, is the highest in ASEAN region (28.87%). Total citations for documents published from Indonesia was 980, with an average of 14 citations per publication and h-index of 16. Within the first five years, the main research topics were related to insect vector and diagnostic method. While insect vector will remain to be dominant in the next five years, other topics such as disease outbreak, dengue virus, and dengue vaccine started emerging.

Conclusion. In the last tenyears, the growth of dengue publications from Indonesia in international journals improved significantly, despite less number of publications compared to other SEA countries. Efforts should be made to improve the quantityand quality of publications from Indonesia.

Keywords: bibliometric, dengue research, Indonesia, network analysis

Pain characteristics on patient undertaking hemodialysis

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Introduction. Pain is one impact of hemodialysis therapy. In nursing field, there are two possible nursing diagnosis which are called Acute Pain or Chronic Pain. Research in pain especially in patient with hemodialysis is important to be conducted in order to help this population in the process of hemodialysis therapy.

Aim. To identify pain characteristic on hemodialysis patient using Visual Analogue Scale (VAS) and mnemonic PQRST.

Methods. This is a descriptive quantitative cross-sectional research. The number of responden were 72 and they routinely undertake hemodialysis therapy twice a week. Research was conducted in one Central Hospital in Yogyakarta, Indonesia on February 2017. Univariate analysis was used to describe respondents' pain characteristic.

Results. The majority of respondents (51.39%) experience moderate pain, following by mild pain (33.33%) and severe pain (15.28%). The most Provocation characteristic was movement (87.50%), The Quality characteristic was knife-like pain (83.33%). For Regio characteristic was on hand (84.72%), No Radiation of pain (91.67%), and for Time characteristic was intermittent (97.22%). As many as 53% respondents expressed that pain has an impact on their life. Most of consequence of pain was in their activities (52.63%), following with others (15.79.), nausea/vomiting (15.79%), sleep disturbance and appetite (both 13.16%). However, pain did not have an impact on their emotion.

Conclusion. Respondents experience mostly moderate pain. The percentage of characteristics on PQRST mnemonic each percentage of Quality, Regio, Radiation and Time reach above 80% of respondents. The majority of respondents felt the impact of pain in their life.

Keywords: hemodialysis, mnemonic PQRST, pain, *visual analogue scale*

The correlation between length of work and nasal mucociliary transport time of gas station workers

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Introduction. Gasoline contain toxic substances benzene, toluene, ethylbenzene, xylene (BTEX) that are impact on gas station workers health via inhalation continuesly, that are loss of cilia and epithelial cell necrosis of the nasal mucosa.

Aim. Determine the correlation between length of work with nasal mucociliary transport time (NMCTT) of the gas station workers.

Methods. A cross sectional study. The data obtained from anamnesis, physical examination, inspection and NMCTT of gas station workers in Yogyakarta, during November 2013. Inclusion criterion: 1) 18-55 years old, 2) free using nasal topical medication during 10 days. Exclusion criterion: 1) acute rhinitis, 2) ever nasal trauma, 3) ever nasal surgery, 4) allergic rhinitis, 5) nasal deviation. Correlation analyze between length of work with NMCTT of gas station workers using Spearman correlation test with α 5% level of significance ($p < 0.05$).

Results. From 38 subjects, 27 (71.1%) men and 11 (28.9%) women. Median length of work 7.37 years, NMCTT: 10.84 minutes. Spearman correlation test results between length of work and NMCTT (r): 0.578 ($p = 0.001$).

Conclusion. There was a positive correlation between length of work with NMCTT of gas station workers.

Keywords: gasoline vapor, gas station workers, length of work, nasal mucociliary transport time

Deletion polymorphism of angiotensin converting enzyme gene is associated with low muscle mass of elderly people in Jakarta

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Introduction. Ageing decline in muscle mass is a growing public health problem, because it contributes to decreased capacity for elderly independent living. It is important to determine any genetic factors, since we know that angiotensin converting enzyme (ACE) I/D gene polymorphism affects muscle mass but how remains controversial.

Aim. This aim of the study is to determine the association of (ACE) I/D gene polymorphism on muscle mass of elderly people.

Methods. A total of 130 elderly people were recruited from Panti Wreda in Jakarta. Anthropometrics parameter, muscle mass, and genotypes were measured. Cross-sectional analyses compared data using t-test, linier regression, anova, and ancova. Additionally, ACE I/D polymorphism and anthropometric parameter were measured to show their effect on muscle mass by multiple linier regression.

Results. The distribution of the ACE I/D II genotype (II 65.38%, ID 13.85% and DD 20.77%) was significantly different to Hardy Weinberg Equilibrium ($\chi^2=22.2$ df=2, $p<0.01$). The DD genotype showed lower muscle mass significant differences than II/ID genotype (II 16.14 ± 0.38 , ID 15.71 ± 0.59 ; DD 13.95 ± 0.61) with adjusted % fat as covariate. The linier regression results showed age, gender, weight, height, nutritional status, waist, hip and calf circumference and protein were significant contributors to muscle mass. Adjusted protein, gender and age in multivariate tests were significant to muscle mass, with $r^2=0.98$, likelihood ratio test ($p<0.01$). The genotypes' variability accounted for DD=2.65%.

Conclusion. The DD genotype ACE gene polymorphism was associated with low muscle mass. This suggested the role of nutritional status as a potential mediator in the association between gen ACE and muscle mass.

Keywords: angiotensin converting enzime genotype, anthropometric, muscle mass, elderly

The effects of lipopolisaccharide-induced periodontal disease on the pulmonary lymphocytes of the rat's model

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Introduction. Periodontal disease is a chronic inflammatory disease on periodontal tissues that may affects systemic condition, including lung disease. Lipopolysaccharide that triggers the disease may affect the expression of the pulmonary lymphocytes, and histologic appearance of the lung.

Aim. To investigate the effect of topical induction of *Escherichia coli*. *coli* LPS on upper maxillary periodontal tissues on the expression of pulmonary CD3+Tcell and histologic appearance of the lung.

Methods. Ten wistar male rats, aged 6-8 weeks, weighted 200 grams used as the subjects were divided into 2 groups, control and treated group. The solution of one mg of LPS diluted in 1ml saline were thickened using % carboxymethyl cellulose (CMC). Under general anaesthesia, ten μ l of *E. coli* LPS gel were topically applied on the buccal and palatal molar gingiva around the sulcus every two days for 19 days. The subjects were sacrificed by intracardial perfusion using paraformaldehyd 4%. The lung and gingiva were histologically processed, and stained using HE. Immunohistochemistry staining were done to detect the expresion of CD3+T cell, on the gingiva and the lung. The data were analyzed using T-test.

Results. The microarchitecture of the lung was changed. There was an increase of pulmonary lymphocytes population on peribronchial, interstitial tissues and alveolar spaces. Moreover, the thickening of alveolar wall narrowed the alveolar spaces. However, the CD3+ T cell expressions on both gingiva and lungs were not significantly different ($p>0.05$).

Conclusion. *E. coli* LPS topical application on periodontal tissues may trigger some chronic inflammatory conditions of the lung.

Keywords: *E-coli* LPS, lung, periodontal disease, pulmonary lymphocyte

Axon morphology improvement of sciatic nerve after 6-shogaol treatment in mice with painful diabetic neuropathy

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Introduction. Longterm hyperglycemic in diabetes mellitus leads to degeneration and regeneration of peripheral axons and causes painful diabetic neuropathy (PDN). Nowadays, there is no appropriate drug that have been curable for chronic pain. 6-shogaol is one of the ginger component that have stucture similarity to capsaicin, an agonist TRPV-1. However, TRPV-1 has an important role in PDN that involves in degeneration and regeneration of peripheral axon including sciatic nerve.

Aim. The present study was designed to investigate the effect of 6-shogaol to ameliorate axon morphology of sciatic nervus in mice with painful diabetic neuropathy.

Methods. Diabetes was induced in male Balb/c mice by intraperitoneal injection of streptozotocin (STZ) 110 mg/kg BW. Four week after induction, mice suffered painful neuropathy that characterized by hyperalgesia and allodynia. Then, mice were divided into six groups: control, diabetic, 6-shogaol (5, 10 and 15 mg/kgBW) and ginger extract dose 400 mg/kg BW, once daily for three weeks. At the end, sciatic nerve morphology was investigate with osmium tetroxide 1% staining.

Results. Histological study showed that longterm hyperglycemic caused degeneration and regeneration of axon in sciatic nerve of mice. 6-shogaol dose 15 mg/kgBW administration reduced degeneration of axon in sciatic nerve better than the other dose. 6-shogaol also fixed nerves peripheral morphology such as size and shape of axon and myelin, compared to diabetic mice.

Conclusion. 6-shogaol produces protection in axon morphology of sciatic nerve in painful diabetic neuropathy that makes it a potential candidates for treatment of painful diabetic neuropathy.

Keywords: 6-shogaol, mice, neuropathy, painful diabetic, sciatic nerve

The effect of diode laser intensity modulation to the photoacoustic image of oral soft tissue

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Introduction. Various imaging techniques have been developed to assist physicians and dentist in the detection of various disease. Photoacoustic imaging (PAI) is a new emerging imaging technique that has demonstrated capabilities to image soft tissues. This study demonstrated the utilization of non-ionizing laser illumination in the prototype of PAI system to image oral soft tissue.

Aim. To evaluate the effect of diode laser intensity modulation to the photoacoustic image produced by the PAI system built in this study.

Methods. Sample of this study was oral soft tissue from 6 Sprague Dawley rats, placed in plasticine and then imaged by using the PAI system. The system utilized intensity modulated continuous-wave diode laser. To determine the optimum duty cycle to be used in laser modulation, the laser exposure to image the sample was set in various duty cycles, i.e. 10%, 14%, 18%, 22%, 26%, and 30%.

Results. The Kruskal-Wallis test with The Mann-Whitney test post hoc analysis revealed there were statistically no significant differences between PA-images produced by using different laser modulation. The biological effect of laser illumination on oral soft tissue were observed in the highest intensity modulation of laser irradiation, by using duty cycle of 30%.

Conclusion. The effect of laser intensity-modulation was not statistically significant to the PA-image. By using diode laser with a wavelength of 532nm and output peak power of 200mW, the maximum laser modulation for oral soft tissue imaging was 30%. Duty cycle of 30% and more may produce biological changes in oral soft tissue that may reduce the PA-image quality.

Keywords: image, intensity, laser, modulation, oral, photoacoustic

ATTACHMENTS



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Field of Interest

- Pattern recognition, artificial intelligence, and image processing with applied field of interests on biometrics and computer aided diagnosis for Malaria status identification from blood smears microphotograph

Education

1995	B.Eng., Electrical and Computer Engineering, Nagoya Institute of Technology of Japan
2000	M.Eng., Electrical and Computer Engineering, Nagoya Institute of Technology of Japan
2003	Dr.Eng Electrical and Computer Engineering, Nagoya Institute of Technology of Japan



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Eijkman Institute for Molecular Biology, Jakarta, Indonesia

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Field of Interest

- The role of the extrachromosomal DNAs in the assembly of the mitochondrial energy transducing membrane of the malarial parasite
- Antimalarial drug discovery
- Molecular mechanisms underlying *Plasmodium* resistance to antimalarial drug, molecular taxonomy of the malarial parasite
- The molecular studies on the malaria vector resistance to insecticides

Education

1985 Trained in medicine at Hasanuddin University, Makassar, Indonesia

1989 Ph.D. Doctor of parasite cell biology, Toyama University, Toyama, Japan.



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Field of Interest

- Infection and tropical diseases, especially dengue virus and HIV, infection control, emerging and imported diseases and immunology
- Eliminate Dengue Project in Yogyakarta (EDP-Yogya) since 2011

Education

2005 PhD degree in molecular biology and immunology from Graduate School of Medicine, Chiba University, Japan



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Field of Interest

- Oral Medicine

Education

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SMPN 1 Ngawi

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Presentations

- Perawatan oral pada pasien dengan terapi kanker 2/6/2016
- Diagnosis dan Penatalaksanaan Kelainan Oral Berpotensi Ganas, 1/22/16
- Asesmen status kesehatan gigi dan mulut pada lansia, 6/15/2015
- Infeksi oportunistik Candidiasis di rongga mulut, 11/21/15
- Manifestasi Infeksi HIV-AIDS Di Mulut, 6/12/14



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Field of Interest

- Tropical Dermatology
- Allergy/ Immunology
- Photodermatology

Education

1978–1982 UGM/UNDIP

1989–1996 FK UGM, Univ. Leiden

Publications

- IPutu Yuda Hananta, Henry John Christiaan De Vries, Alje P Van Dam, Martijn Sebastiaan Van Rooijen, **Hardyanto Soebono**, Maarten Franciscus Schim Van Der Loeff. 2017. O05. 2 Pharyngeal gonococcal infection: spontaneous clearance and persistence after treatment. *Sex Transm Infect*, A10-A11
- IPutu Yuda Hananta, Alje PVan Dam, Sylvia Maria Bruisten, Maarten Franciscus Schim Van Der Loeff, **Hardyanto Soebono**, Henry John Christiaan De Vries. 2017. P2. 18 The value of light microscopy to diagnose urogenital gonorrhoea in indonesian clinic-based and outreach sexually transmitted infections services. *Sex Transm Infect*, A77–A77
- JAF Oosterhaven, SA Febriana, **H Soebono**, PJ Coenraads, MLA Schuttelaar. 2017. Result of patch testing in Indonesian shoe factory workers. *Journal of the European Academy of Dermatology and Venereology*, 31(1)
- Giam YC, Hebert AA, Dizon MV, Bever HV, Recto MT, Kim KH, **Soebono H**, Munasir Z, Diana IA, Luk DCK. 2016. A review on the role of moisturizers for atopic dermatitis. *Asia Pacific Allergy*, 6(2): 120
- Widodo Y Wirohadidjojo, Budiyanto A, **Soebono H**. 2016. Platelet-rich fibrin lysate can ameliorate dysfunction of chronically UVA-Irradiated Human Dermal Fibroblasts. *Yonsei Medical Journal*, 57(5), 1282-1285
- Wirohadidjojo YW, Budiyanto A, **Soebono H**. 2016. Regenerative Effects of Whartonâ€™s Jelly Stem Cells-Conditioned Medium in UVA-Irradiated Human Dermal Fibroblasts. *Malaysia Journal of Medical and Biological Research*, 3(1): 45-50



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Field of Interest

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Education

1986 – 1992	D.D.S., The University of Tokushima School of dentistry, Japan
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2002 – 2005	Post-Doctoral Fellow, Boston University School of Medicine, Section of Infectious Diseases, Boston, USA



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Field of Interest

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Education

1987	Undergraduate, Faculty of Medicine, Universitas Gadjah Mada, Indonesia
1994	Master, Pharmacoepidemiology, University of Newcastle, Australia
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Field of Interest

- Development of molecular diagnostic
- Identification assays for microorganisms
- Evaluation of novel technologies for clinical microbiology

Education

Postdoctoral fellowship at the Novartis Institute of Tropical Diseases

Publications

- Marimuthu Kalisvar, Indumathi Venkatachalam, Wei Xin Khong, et al. **Jeanette Teo**, and Oon Tek Ng, for the Carbapenemase-Producing Enterobacteriaceae in Singapore (CaPES) Study Group. Clinical and molecular epidemiology of carbapenem resistant Enterobacteriaceae among adult inpatients in Singapore. *Clin Infect Dis.* 2017;64(S2):S68–75.
- **Teo JW**, La MV, Lin RT. Development and evaluation of a multiplex real-time PCR for the detection of IMP, VIM, and OXA-23 carbapenemase gene families on the BD MAX open system. *Diagn Microbiol Infect Dis.* 2016; 86(4):358-361.
- Khong WX, Marimuthu K, **Teo J**, et al. and the Carbapenemase-Producing Enterobacteriaceae in Singapore (CaPES) Study Group. Tracking inter-institutional spread of NDM and identification of a novel NDM-positive plasmid, pSg1-NDM, using next-generation sequencing approaches. *J Antimicrob Chemother.* 2016; 71(11):3081-3089.
- **JWP Teo**, KL Chew and RTP Lin. Transmissible colistin resistance encoded by mcr-1 detected in clinical Enterobacteriaceae isolates in Singapore. *Emerging Microbes Infect.* 2016; 5(8):e87.
- **Teo JW**, La MV, Jureen R, Lin RT. Emergence of a New Delhi metallo-β-lactamase-1-producing *Pseudomonas aeruginosa* in Singapore. *Emerg Microbes Infect.* 2015; 4(11):e72.



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Education

1993-1999 Kochi Medical University
1999 MD Kochi Medical University
2006 PhD Department of Urology, Kobe University Graduate School of Medicine

Professional qualification

1999 MD certificate
2008 Urological specialist certificate
2013 Urological adviser certificate

Awards

2014 Reviewers of International Journal of Urology 2013
2014 Best Poster Award at 29th European Urological Association
2009 Young Research Contest award at West Japan Urological Association
2007 Japanese Urological Association 65th Sakaguchi-award

Publications

- **Shigemura K**, Fujisawa M. Editorial Comment to Testicular torsion-detorsion and potential therapeutic treatments: A possible role for ischemic postconditioning. *Int J Urol.* 2016 May 15.
- **Shigemura K**, Tanaka K, Yamamichi F, Chiba K, Fujisawa M. Comparison of Predictive Factors for Postoperative Incontinence of Holmium Laser Enucleation of the Prostate by the Surgeons' Experience during Learning Curve. *Int Neurourol J.* 2016 Mar;20(1):59-68.
- Li X, Wu JB, Li Q, **Shigemura K**, Chung LW, Huang WC. SREBP-2 Promotes Stem Cell-Like Properties and Metastasis by Transcriptional Activation of c-Myc in Prostate Cancer. *Oncotarget.* 2016 Mar 15;7(11):12869-84.
- Osawa K, **Shigemura K**, Shirai H, Kato A, Okuya Y, Jikimoto T, Arakawa S, Fujisawa M, Shirakawa T. Bacterial Identification Using SSRA Encoding Transfer-Messenger RNA. *Southeast Asian J Trop Med Public Health.* 2015 Jul;46(4):720-7.



Khin Saw Myint

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Field of Interest

- Laboratory capacity building, research and characterization of arboviruses and neurotropic viruses
- Worked extensively with hepatitis viruses, influenza, arboviruses, leptospirosis and in the field of pathogen discovery
- Worked on emerging pathogens with AFRIMS Virology Department in Bangkok for 22 years
- Conducted human, animal, and laboratory studies on the transmission and pathology of viral and bacterial diseases

Education

MD from Institute of Medicine 2, Yangon, Myanmar

DTM&H PhD from University of Liverpool, UK.



Mohamad Subuh
Prevention and Disease Control
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Field of Interest

- Chest diseases

Education

1988	School of Medicine, University of Indonesia, Jakarta, Indonesia Qualification: Medical Doctor (MD)
1999	School of Public Administration, University of Southern California, Los Angeles, USA Qualification: Master Public Policy (MPPM)

Employment

1989 – 1997	Head of Public Health Center of Sintang District, West Kalimantan
1997 – 2000	Head of Health office, Sintang District, West Kalimantan
2000 – 2004	Head Unit of Provincial Health Office West Kalimantan
2004 – 2009	Director of Sultan Syarief Mohamad Alkadrie General Hospital, West Kalimantan
2009 - 2010	Head of Provincial Health Office West Kalimantan
2010 – 2013	Director of Communicable Disease Control, Directorate General Disease Control and Environment Health
2013 – 2014	Secretary of Directorate General Disease Control and Environmental Health
2014 - 2016	Director General of Disease Control and Environmental Health
2016 - present	Director General of Prevention and Disease Control

Conferences

2017	High Level Ministerial Panel-29th Stop TB Partnership Coordinating Board Meeting and G20 Health Ministers Meeting, Berlin, Germany
2017	12th ASEAN Senior Officials Meeting on Health Development (SOMHD), Bandar Seri Begawan, Brunei Darussalam
2017	Ministerial Meeting Towards Ending TB in the South-East Asia Region, New Delhi, India
2016	The 85th General Assembly of INTERPOL, Bali, Indonesia



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Field of Interest

- Biobehavior research
- HIV/ST
- Prevention and management for emerging infectious diseases
- Woman health and gender studies

Education

- 1986-1990 B.S.N., School of Nursing, Kaohsiung Medical College, Kaohsiung, Taiwan
- 1992-1995 M.S. from Graduate Institute of Nursing, Kaohsiung Medical College, Kaohsiung, Taiwan
- 1999- 2003 Ph.D. from School of Nursing, University of Washington

Awards

- 2016 Outstanding contribution to Disease Control/ Taiwan Center of Disease Control
- 2016 Global Nursing Leadership Insititute, International Council of Nursing
- 2016 Training of Trainers (TOT), International Council of Nursing
- 2016 Nightingale Award in HIV Care, Cih-Yue Charity Foundation
- 2016 Leadership for Change Programme (LFCTM), International Council of Nursing
- 2016 Outstanding Research Award in Medicine Humanities/ Colleage of Medicine, National, Cheng Kung University
- 2015 Excellent Research Award/ Cheng-Sin Foundation, National Cheng Kung University
- 2015 Leadership for Change Programme (LFCTM), International Council of Nursing
- 2014 Excellent Research Award/ Cheng-Sin Foundation, National Cheng Kung University
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Field of Interest

- Nanobiotechnology
- Drug/gene delivery system
- Gene therapy

Education

2000	Undergraduate, Department of Biology, Faculty of Sciences, Universitas Diponegoro, Indonesia
2003	Master, Biotechnology, Inter-University Center, Universitas Gadjah Mada, Indonesia
2007	Doctor, Department of Pharmaceutical Technology, Institute of Pharmacy, Leopold-Franzenz Universitat Innsbruck, Austria



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Field of Interest

- HIV/AIDS
- Tuberculosis
- Cryptococcosis
- Cardiovascular/metabolic complications in HIV/AIDS

Publications

- Published over 200 articles in international peer-reviewed journals such as Clinical Infectious Diseases, AIDS, JAIDS, Lancet Infectious Diseases, and Journal of Antimicrobial Therapy
- Reviewer for many leading infectious diseases journals

Education

Medical degree from Mahidol University

Trained infectious diseases from Washington University School of Medicine, USA



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Field of Interest

- Natural product chemistry
- Pharmaceutical microbiology

Education

1997	Bachelor degrees, Faculty of Pharmacy, Universitas Gadjah Mada, Indonesia
1998	Pharmacist degrees, Faculty of Pharmacy, Universitas Gadjah Mada, Indonesia
2000	Master of Science, Faculty of Pharmacy, Universitas Gadjah Mada, Indonesia
2007	Dr.rer.nat, Pharmaceutical Biology and Biotechnology Department, University of Heinrich-Heine, Duesseldorf, Germany



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Field of Interest

- Microbiology and molecular biology
- Immunology and vaccinology

Education

1978	DVM, Faculty of Veterinary Medicine, Universitas Gadjah Mada
1986	Magister (MS), Graduate School, Universitas Gadjah Mada
1991	Ph.D. in Microbiology & Molecular Biology, University of Kent Canterbury, UK
1997	Post-Doct. in Molecular analysis of genetic diversity, NIAI-Tsukuba, Japan
1999	Post-Doct. in Molecular analysis of haemagglutinin gene, School of Biomedical Sciences, Bristol University, UK.



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Field of Interest

- Rotavirus
- Vaccinology
- Pediatrics
- Gastroenterology
- Medical Humanities & Bioethics

Education

1970	M.D., Faculty of Medicine, UGM
1975	Pediatrician, Faculty of Medicine, UGM
1978	Pediatric Gastroenterology, Wilhelmina Children Hospital, Utrecht, The Netherlands
1985	Pediatric Gastroenterology, RCH-Melbourne University
1988	Pediatric Consultant for Gastroenterology, Indonesian Pediatric Society
1988	Health Care Evaluation & Management Skills, University of Toronto
1995	Freeman fellow, Department of Social Medicine, Harvard Medical School, Boston
1997	Ph.D, Faculty of Medicine, Vrije Universiteit, Amsterdam
2008	Professor in Pediatric, Faculty of Medicine UGM

Awards

2015	Doctor of Medical Science honoris causa, University of Melbourne
2013	National Innovation Council (NIC)-President award. Award for a long standing collaboration between UGM, Royal Children Hospital at Melbourne University and Murdoch Children Research Institute, & Biofarma
2011	Co-author, ABC 12 Conference in Taiwan. Award for The 4th place of full paper prize in the 12th Asian Bioethics Conference.



Yodi Mahendradhata

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Field of Interest

- Health policy and management
- Global health
- Disease control

Education

1999	Medical Doctor in Faculty of Medicine, Gadjah Mada University, Jogjakarta, Indonesia
2002	Master of Science in TropEd – Master programme in International Health
2009	Doctoral in Medical Science in Institute of Tropical Medicine, Antwerp, Belgium and Faculty of Medicine and Health Sciences, Ghent University, Ghent, Belgium

Awards

2004	Belgian Directorate General for Development Cooperation (DGDC)
2012	Scopus Young Scientist Award 2012 for Sustainable Development – Elsevier, Humboldt Foundation and United Nations University
2013	Alexander von Humboldt Fellow for Experienced Researchers
2015	Lecturer of the Year award, Faculty of Medicine, Universitas Gadjah Mada
2015	Health Security Steward Fellow

Publication

- Ravinetto R, Tinto H, Diro E, Okebe J, Mahendradhata Y, Rijal S, Gotuzzo E, Lutumba P, Nahum A, De Nys K, Casteels M, Boelaert M (2016). It is time to revise the international Good Clinical Practices guidelines: recommendations from non-commercial North–South collaborative trials. *BMJ Global Health* 2016;1: e000122. doi:10.1136/bmjgh-2016-000122

INDEX



KEYNOTE SPEAKERS

M. Subuh	08:30	Day 1	Ballroom	KEY1	-
Director General for Prevention and Control of Disease, Ministry of Health of Indonesia Email: tudirjen_pppl@yahoo.co.id					
Nai-Ying Ko	09:30	Day 1	Ballroom	KEY3	-
National Cheng-Kung University, Taiwan Email: nyko@mail.ncku.edu.tw					
Yati Soenarto	09:00	Day 1	Ballroom	KEY2	38
Department of Child Health, Faculty of Medicine, Universitas Gadjah Mada, Indonesia Email: ysoenarto@ugm.ac.id					
Yodi Mahendradhata	10:00	Day 1	Ballroom	KEY4	40
Department of Health Policy and Management, Faculty of Medicine, Universitas Gadjah Mada, Indonesia Email: yodi_mahendradhata@yahoo.co.uk					

INVITED SPEAKERS

Anto Satriyo Nugroho	13:30	Day 2	Ballroom	INV2-07	50
Center for Information and Communication Technology Agency for Assessment and Application of Technology, Indonesia Email: anto.satriyo@bppt.go.id					
Din Syafrudin	14:20	Day 1	Ballroom	INV1-05	45
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Eggi Arguni	14:00	Day 1	Ballroom	INV1-04	44
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Goeno Soebagyo	08:50	Day 2	Ballroom	INV2-02	-
Faculty of Dentistry, Universitas Gadjah Mada, Indonesia Email: goeno_subagyo_fkg@ugm.ac.id					
Hardyanto Soebono	08:30	Day 2	Ballroom	INV2-01	47
Department of Dermatology and Venereology, Faculty of Medicine, Universitas Gadjah Mada, Indonesia Email: hardyanto@ugm.ac.id					
Hiromichi Yumoto	14:10	Day 2	Ballroom	INV2-09	52
Department of General Dentistry (Conservative Dentistry), Tokushima University Hospital, Japan Email: yumoto@tokushima-u.ac.jp					
Iwan Dwiprahasto	10:40	Day 2	Ballroom	INV2-06	-
Faculty of Medicine, Universitas Gadjah Mada, Indonesia Email: iwandwi@ugm.ac.id					
Jeannette Teo	10:00	Day 2	Ballroom	INV2-04	48
National University of Singapore, Singapore Email: jeannette_teo@nuhs.edu.sg					
Katsumi Shigemura	14:40	Day 1	Ballroom	INV1-06	46
Department of Urology and Department of Infection control and prevention, Kobe University Hospital and Department of International Health, Kobe University Graduate School of Health Sciences Email: yutoshunta@gmail.com					

Khin Saw Myint	10:45	Day 1	Ballroom	INV1-01	41
Emerging Virus Research Unit for Molecular Biology, Eijkman Institute, Indonesia					
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Nai-Ying Ko	09:10	Day 2	Ballroom	INV2-03	-
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Ronny Martien	13:50	Day 2	Ballroom	INV2-08	-
Faculty of Pharmacy, Universitas Gadjah Mada, Indonesia					
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Somnuek Sungkanuparph	11:25	Day 1	Ballroom	INV1-03	43
Division of Infectious Diseases, Department of Medicine, Faculty of Medicine Ramathibodi Hospital, Mahidol University, Bangkok, Thailand					
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Triana Hertiani	10:20	Day 2	Ballroom	INV2-05	49
Department of Pharmaceutical Biology and Centre for Natural Antiinfective Research, Faculty of Pharmacy, Universitas Gadjah Mada, Indonesia					
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Widya Asmara	11:05	Day 1	Ballroom	INV1-02	42
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PRESENTERS

Ahmad Watsiq Maula	15:15	Day 2	Sunflower	S2-149	147
Department of Biostatistic, Epidemiology and Population Health, Faculty of Medicine, Universitas Gadjah Mada, Indonesia					
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Aisha Rahma Fairuz	13:00	Day 1	Ballroom	B1-160	68
Undergraduate Program, Faculty of Dentistry, University of Jember, Indonesia					
Email: aisha.rf96@gmail.com					
Alindya Diani	13:00	Day 1	Ballroom	A1-070	63
Faculty of Medicine, Universitas Gadjah Mada, Indonesia					
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Department of Oral Biology, Faculty of Dentistry, Universitas Gadjah Mada, Indonesia					
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Amadeo Drian Basfiansa	13:00	Day 1	Ballroom	D1-083	79
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Amrina Rosyada	13:00 11:15	Day 1 Day 2	Ballroom	D1-117 A2-114	81 110
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Andaru Dahesihdewi	11:15	Day 2	Ballroom	A2-105	108
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Andi Lestiono	16:45	Day 1	Lotus	L1-180	94
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Anisatul 'Afifah	13:00	Day 1	Ballroom	D1-076	77
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Arend Laurence Mapanawang	11:15	Day 2	Ballroom	C2-084	118
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Arief Nurochmad	15:30	Day 2	Irish	I2-075	152
Department of Pharmacology and Clinical Pharmacy, Faculty of Pharmacy, Universitas Gadjah Mada, Indonesia Email: ariefnr@ugm.ac.id					
Arum Sari	16:00	Day 1	Lotus	L1-129	90
Microbiology Laboratory, Faculty of Biology, Universitas Gadjah Mada, Indonesia Email: annisah-endang@ugm.ac.id					
Atika Dwi Astuti	13:00	Day 1	Ballroom	D1-082	78
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Atina Husnayain	16:00	Day 1	Hibiscus	H1-156	85
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Bambang Udji Djoko Rianto	16:00 15:00 15:45	Day 1 Day 2 Day 2	Irish Lotus Sunflower	I1-053 L2-095 S2-054	103 141 149
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Besly Sinuhaji	13:00	Day 1	Ballroom	A1-034	58
Clinical Pathology, Faculty of Medicine, Universitas Gadjah Mada, Indonesia Email: besly_shj@yahoo.co.id					
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Dian Nirmala Sirait	11:15	Day 2	Ballroom	C2-181	127
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Doctoral Programme, Faculty of Dentistry, Universitas Gadjah Mada, Indonesia					
Dental School, Faculty of Medical and Health Science, Universitas Muhammadiyah, Indonesia					
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Department of Pharmaceutics, Faculty of Pharmacy, Universitas Gadjah Mada, Indonesia					
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Departement of Biomedical Sciences, Faculty of Dentistry, Jember University, Indonesia					
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Fef Rukminingsih	11:15	Day 2	Ballroom	C2-147	122
Faculty of Pharmacy, Universitas Gadjah Mada, Indonesia					
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Fiko Ryantono	11:15	Day 2	Ballroom	D2-128	128
Postgraduate Medical Student, Faculty of Medicine, Universitas Gadjah Mada, Indonesia					
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Fuad Dheni Musthafa	11:15	Day 2	Ballroom	C2-153	124
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Center for Pharmacology and Medicine Policy Studies, Universitas Gadjah Mada, Indonesia					
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Ketut Ima Ismara					
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Email: ketut.ima.ismara@mail.ugm.ac.id					
Kwartarini Murdiastuti					
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Email: kmurdiastuti@ugm.ac.id					
Laili Rahmatul Ilmi					
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Luz Maria Goretti					
Department of Clinical Pathology and Laboratory Medicine, Faculty of Medicine, Universitas Gadjah Mada, Indonesia	13:00	Day 1	Ballroom	A1-037	59
Email: osmansianipar@ugm.ac.id					
Maria Dara Novi Handayani					
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Martini	11:15	Day 2	Ballroom	A2-184	114
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Ni Luh Putu Siska Kahari Sari	13:00	Day 1	Ballroom	A1-030	57
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Department of Environmental Health, Faculty of Medicine, Universitas Gadjah Mada, Indonesia Email: nila.sari18@yahoo.co.id					
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Universitas Gadjah Mada, Indonesia Email: tilak.chandara@mail.ugm.ac.id					
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Bachelor of Nursing Student, Faculty of Medicine, Universitas Gadjah Mada, Indonesia Email: yopidarmawan@mail.ugm.ac.id					

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