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Editorial Note

Human immunodeficiency virus (HIV) is a pathogen for AIDS and member of the retroviridae family. HIV has two major serotypes which are HIV-1 and HIV-2. Host reactions to HIV through the cellular immune response by producing neutralizing antibody.[1] A lot of studies has been conducted to find vaccine and drug for HIV cases. The study is including the production of the recombinant protein of HIV which will have an association with the reduction in viremia, viral replication control, and slow disease progression.

Dengue infection in Indonesia is still a big problem and occurs throughout the year. Some study found that climate can influence the dengue transmission by affecting the environment of the vectors, and mosquito - human interactions.[2] The resistance to insecticides also become another problem to reduce dengue transmission. Considering the condition of dengue transmission and other infectious diseases in Indonesia, an early warning system is very important. The web based on early warning alert and response system (EWARS) has been established since 2009 and should be implemented in all provinces in Indonesia.

One of the health problems is depression. Many factors contribute to developing depression, including medical, social, and economic. Pregnancy and after giving birth can cause an emotional disorders such as depression. This should be anticipated by the family members and healthcare practitioners by good communication. A guideline of assessment healthcare practitioner (doctor) – patient communication such as The Calgary-Cambridge Observation Guides (CCOG) is widely used. However, the emotional disorders can also be arisen among the persons who live in a building for years with the same routine activities. It is important to provide a good working environment.

While there are biomedical drugs for managing diseases, the traditional medicines have been developed for complimentary drugs. Traditional treatment derived from medicinal plants that can be used for several diseases such as diabetes, helminth infections, mouth infections, dietary therapy and etc. Traditional medicine has been widely used for prevention and treatment for the majority of the world's population. According to the World Health Organization, up to 90% of population in developing countries use plants and its products as traditional medicine for primary health care. Traditional medicine can be an important part of the health services.[3]

Vivi Setiawaty

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QW 168.5

Heri Setiyo Bekti, Silvia Tri Widyaningtyas, Budiman Bella

HIV-1 Gag specific IgG response in mice immunized with Vp22-Gag vaccine candidate

Background: Stimulation of Gag-specific CD8^{+} T-cell response, associated with reduction in viremia, viral replication control, and slow disease progression. Effective CD8^{+} T cell response is also influenced by CD4^{+} T cells. Gag recombinant protein may be cloned and expressed in the prokaryotic system and when they are immunized in experimental animals or human will have property as exogenous antigens. Exogenous antigens may become endogenous antigens by adding proteins that have the ability to translocate into the cell membrane, one of which is the Vp22 protein.

Methods: Recombinant plasmids were obtained from Research and Services Centers of Virology and Cancer Patobiology Medical Faculity Universitas Indonesia-dr. Cipto Mangunkusumo National Central General Hospital (PPLVKP FK UI-RSCM) which transformation to prokaryotic expression system with heat shock method was followed by expression of recombinant proteins. Purification of recombinant proteins was performed with affinity chromatography. The molecular weight analysis of recombinant proteins was performed with SDS-PAGE. Western blotting was performed to determine the reactivity of recombinant proteins with polyclonal antibodies against p24 antigens. Transfection of Chinese Hamster Ovary (CHO) cell and immunization of Deutschland, Denken, and Yoken (DDY) mice with recombinant proteins was conducted to determine intracellular migration ability and stimulation of specific immune response.

Results: Western blotting test, indicating recombinant protein may interact with polyclonal antibody against p24 antigens. The observation of a confocal microscope showed recombinant proteins localized with endosomes. The Enzyme-linked Immunosorbent Assay (ELISA) test indicates Gag-specific IgG response after immunization in DDY mice.

Conclusion: Recombinant proteins may be expressed on a prokaryotic expression system. The ability of recombinant protein intracellular migration in CHO cell has not been proven. Recombinant proteins may stimulate Gag-specific IgG response.

Keywords: Gag and Vp22-Gag recombinant proteins; intracellular migration, Gag-specific IgG response

WC 528

Khadijah Azhar, Rina Marina, Athena Anwar

A prediction model of Dengue incidence using climate variability in Denpasar city

Background: Denpasar city in Bali province is one of cities with the highest dengue incidence in Indonesia. Environmental factors such as climate variability is one of the factors that influence the incidence of dengue. This study aimed to obtain a predictive dengue incidence models using secondary data of weekly climate and surveillance of dengue cases in Denpasar, Bali, 2010-2014.

Methods: Climate data was obtained from Indonesia Agency for Meteorological, Climatological, and Geophysical (BMKG), while dengue clinical cases were obtained from Primary Health Care as reporting unit in Early Warning Alerts Respons System

(EWARS) Ministry of Health. Data analysis was using linear regression with various combinations of climate variables and *lag time.*

Results: The study showed significant relationship between the number of dengue cases, rainfall, temperature, humidity and the incidence of dengue ($p<0.05$). Incidence of dengue in Denpasar city was affected by climate variability of 4-week period (at lag 4 weeks) earlier and the number of dengue cases was from two weeks earlier. Thus climate factors affected the incidence of dengue indirectly.

Conclusion: The prediction model can be used as one of the considerations on the early warning of dengue disease in Denpasar city, while providing counseling or education efforts to the community about prevention of dengue and vector elimination. It also allows sufficient time for health systems to be prepared to respond and better understanding of dengue cases.

Keywords: Denpasar, Dengue, Climate, Regression, Lag time

QX 525

Dyah Widiastuti, Bina Ikawati, Martini, Nastiti Wijayanti

Biochemical characterization of insecticide resistance and exposure in *Aedes aegypti* population from Wonosobo (a new highland Dengue endemic area), Central Java, Indonesia

Background: Resistance to insecticides mainly occurs due to changes in insect metabolic enzyme. A metabolic enzyme which was often involved in insecticide resistance is esterase and monooxygenase.

Methods: Susceptibility test and biochemical assay to detect malathion and cypermethrin resistance were conducted on *Aedes aegypti* from Wonosobo (new highland Dengue endemic area). The test was performed on F1 generation of *Ae.aegypti* field caught mosquitoes which aimed to determine the resistance mechanisms regarding two detoxifying enzymes i.e. esterase and monooxygenase. Interview using structured questionnaires was conducted to investigate the usage of insecticide by the society and local government.

Results: Susceptibility test showed 23.4 and 46.7% mortalities after exposure to 0.8% malathion and 0.05% cypermethrin. The biochemical assay result suggested that esterase, and monooxygenase activity tend to increase in *Ae.aegypti* in Wonosobo. Interview and questionnaires conclude that synthetic pyrethroid was the only insecticide type used in vector control program by Wonosobo Health Office and was the most frequent insecticide type to be used in household by Wonosobo society to control *Ae.aegypti* population.

Conclusion: *Aedes aegypti* with increased esterase and monooxygenase activity were found in Wonosobo. This result was in line with the resistance status of *Ae. aegypti* population in Wonosobo which resistant to Malathion and Cypermethrin.

Keywords: *Ae.aegypti* Wonosobo, biochemical, insecticide exposure, resistance

WA 105

Ratna Budi Hapsari, Dyah Armi Riana, Edy Purwanto, Nirmal Kandel, Vivi Setiawaty

Early Warning Alert and Response System (EWARS) in Indonesia: Highlight From The First Years of Implementation, 2009-2011

Background: Early Warning Alert Response System (EWARS) is a web-based syndrome surveillance system, established in Indonesia since 2009, started in two provinces. In order to provide a prompt response of the signals detected on EWARS, the algorithms for diagnosis and response and the laboratory capacity mapping tool were developed. This study aims to describe performance of EWARS implementation and to identify the strengths and gaps of EWARS as a disease early warning and detection system.

Methods: EWARS performance was described by analysis of the EWARS data 2009-2011 in six provinces. EWARS strengths and gaps were identified by conducting general assessment in three selected provinces and laboratory capacity assessment in nine provinces.

Results: The performance of EWARS was quite good in Bali and Lampung at the first year of implementation. In 2010 and 2011, EWARS performance in six provinces was remain good. The system is easy to use and could give information on weekly alerts and mapping. Alert monitoring by using EWARS could be used as an evaluation tool to see the quality of response conducted by local health officers or Rapid Response Team (RRT). Although laboratory confirmation have not done for most of alerts detected by the system, in general, EWARS was well accepted in Lampung, Bali, and South Kalimantan, and gave beneficial to increase performance on early warning function.

Conclusion: EWARS is an opportunity to strengthen sustainable and sensitive surveillance system. The system is well accepted because of easy to use and increase the early warning performances.

Keywords: Early Warning System, Respons, Mapping, Web Surveillance

Sri Idaiani, Nunik Kusumawardani, Rofingatul Mubasyiroh, Olwin Nainggolan, Enung Nurchotimah

Characteristics and Socioeconomic Factors on Perinatal Depression among Mothers and Infants in Three Primary Health Centers in Jakarta and Bogor

Background: The period of pregnancy and childbirth is a very important time for women. During that time, women are more likely to experience emotional disorders such as depression. The objective of this study was to obtain the proportion of perinatal depression (PND), characteristics and socioeconomic determinants of mothers who had just delivered and their babies.

Method: The study design was cross sectional which was conducted in July – August 2016. The subjects were 347 mothers living in territory of Primary Health Center (PHC) of Tebet, Jakarta; and PHC of Merdeka and Sindangbarang in Bogor. The inclusion criteria were mother aged ≥ 18 years, after labour within 4-16 weeks before the interview. The exclusion criteria were had not ever delivered baby

and not living in the study areas. The depression was assessed with an Edinburgh postnatal depression (EPDS) questionnaire. Data were analyzed by univariate analysis and mean difference test for two or more variables using STATA version 10.

Results: In general, the proportion of PND was 15.3%, in which this proportion comprised of 23.6% in PHC of Merdeka, 16.4% in PHC of Tebet, and 6.1% in PHC of Sindangbarang, (p=0.002). Differences in maternal and infant characteristics include education (p=0.001), husband occupation (p=0.001), marital status (p=0.001), economic level (p=0.001) and infants length (p=0.0122).

Conclusion: The proportion and characteristics differs in the three areas. The lowest proportion was in Sindangbarang with low education, informal husband occupation , low socioeconomic and shorter infants length characteristics.

Keywords: perinatal depression, EPDS, characteristics

Selma Siahaan, Rini Sasanti Handayani, Ni Ketut Aryastami

Improving the use of *Curcuma aeruginosa* Roxb. as anthelmintic for children in Bogor Regency

Backgrounds: Worm infections in Indonesia are still high, it needs an appropriate public health intervention. This study aims to improve the knowledge, attitude and practice (KAP) of mothers about self-medication of worm infections using *Curcuma aeruginosa* Roxb., a natural plant easily found in Indonesia

Methods: Study intervention involving the assessment of knowledge, attitude and practice of mothers (77) whose children (80) were feces tested to find out worm infections on their children. The children who confirmed suffering from worm infection were joined *Curcuma* treatment. Health education related to worm infections and its treatment with Curcuma were delivered to mothers. Then PSP of mothers were assessed again using

the same questionnaires as before. Samples were collected from two Village Integrated Health Post in Cibungbulang village Bogor Municipality

Results: Before-after intervention showed, the KAP of mothers increased after they got health education & information i.e. mothers knew that worm infections was a contagious disease 42.90% to 84.40%, mothers knew that dirty or poor cooked food is the way of worm get inside into the body 67.50% to 92.20%) and mothers knew that medicinal plant is one of kind treatment for worm infections 45.50% to 79.20%.

Conclusions: Health education together with *Curcuma's* treatment improved mother's KAP and it was also cured children from worm infections. It is recommended that deworming program for children with *Curcuma* should be appropriate without examination of stools since *Curcuma* effective, safe and may stimulate children's appetite.

Keywords: deworming, *Curcuma aeruginosa* Roxb., anthelmintic, mothers and children.

QU 167

Sudikno, Sandjaja, Idrus Jus'at

The impact of vitamin A fortified vegetable oil on vitamin A status of children under five years of age: A cohort study

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Introduction: Sub-clinical vitamin A deficiency (VAD) and anemia remain major nutritional problem in Indonesia. Although the government has implemented distribution of vitamin A capsules (VAC), there are one third of children missed VAC distribution. This study aimed to measure the effectiveness of vitamin A fortification in unbranded cooking oil among cohort of 6-59-month-old children of poor families in 2 districts in Indonesia prior mandatory vitamin A fortification in cooking oil.

Methods: Total number of samples were 126 children. Venous blood was drawn by trained phlebotomist. Serum retinol and hemoglobin were measured by HPLC and hemoque respectively at baseline just before cooking oil fortification and 12 months after at endline. There was not any intervention from the study team on distribution and purchase of fortified cooking oil by the families, because cooking oil was distributed and sold through exsisting market mechanism. Enumerators collected socio-demographic variables. They also collected 24-hr dietary recall and food frequency questionnaires to measure nutrient intakes at base- and endline.

Results: Serum retinol significantly increased by 5.07, 6.82, 6.01 µg/dL in 6-11, 12-23, and 24-59 month-old children respectively. Hemoglobin increased by 0.13 (p>0.05) , 0.56 (p<0.05), 0.81 g/dL (p<0.05) in 6-11, 12-35, 36-59 month-old children respectively.

Conclusions: Vitamin A fortification in cooking oil significantly improved serum retinol in underfive children in all age groups and hemoglobin only in older age groups.

Keywords: vitamin A deficiency, anemia, vitamin A fortification, cooking oil

W 62

Herqutanto

Modification of Calgary-Cambridge Observation Guide, A More Simplified and Practical Communication Guide for Daily Consultation Practice

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Background: The Calgary-Cambridge Observation Guides (CCOG) is a guide that is widely used to assess Doctor-Patient Communication. The guide consists of 56 points divided into 6 categories that describe a routine consultation process, plus 15 optional points in giving explanation and planning. Due to its quite numerous points, it is quite impractical to use the guide in daily consultation practice. Therefore, a more simplified and more practical version would be favourable.

Method: Seven experts from different background evaluated and analysed the 56 points of CCOG based on the level of importance in daily practice. Two rounds of Delphy were used in the study, the first round to evaluate level of importance, and the second to obtain the possibilities to join items that may have similar meaning. The result of the two

rounds was then recirculated to all members of the team for confirmation of the final modified version of CCOG.

Results: A final modified version of CCOG consisting of 35 points was formed. The first step of a consultation process, *Initiating the session* consists of 5 points (originally 7 points). *Gathering information* step consists of 5 points (originally 11 points), *Providing structure* of 3 points (originally 4 points), *Building relationship* of 7 points (originally 10 points), *Explanation and Planning* of 11 points (originally 20 points), and *Closing the Session* consisting of 4 points. The modified CCOG version is still comprehensive, yet more practical for daily practice.

Conclusion: Modified version of CCOG can be used as a simple, practical guide to assess Doctor Patient Communication in daily consultation practice.

Keywords: The Calgary-Cambridge Observation Guide, Doctor Patient Communication, Modification

Muhamad Ratodi, Tien Zubaidah, Lenie Marlinae

Predicting the Sick Building Syndrome (SBS) occurrence among Pharmacist assistant in Banjarmasin South Kalimantan

Background: Banjarmasin has the highest number of pharmacies among the other area in South Kalimantan. One of the main types of work in stores is a pharmacist's assistant. With their typical indoor job activities and the higher risk of chemical exposures, assistant pharmacist tends to experience the sick building syndrome occurrence. This research aims to identify the primary determinant on the SBS event among pharmacy assistant working at pharmacies in Banjarmasin.

Methods: This is a cross-sectional research with analytical observation method. The research location takes place in 13 pharmacies in the city of Banjarmasin with 73 pharmacy assistants that meet the inclusion criteria serve as respondents. The study analyzes several variables such as SBS occurrence, respondents characteristics, working conditions including room density, temperature, humidity, air velocity and indoor lighting.

Results: There are 29 respondents (39.7%) having an SBS occurrence with a significant correlation between the SBS occurrences with respondents psycho-social condition (OR 26,479), years of service (OR, 9.882), indoor lighting condition (OR 8,912) and respondents behaviors related to SBS occurrences (OR 13,859).

Conclusion: Working environments such as inadequate indoor lighting, working hours arrangement and rest facilities are the determinants of SBS.

Keywords: sick building syndrome, pharmacy assistants

Meilinah Hidayat, Sijani Prahastuti, Ellya R Delima, Liasisca Setiawati, Andreanus A Soemardji

Acute toxicity test of high doses of Detam 1 soybean (Glycine max L.merr) extract, Jati belanda (Guazuma ulmifolia) leaves and their combination

Background: As an antiobesity therapy the combination of Detam-1 soybean extract and Jati Belanda leaves extract should be safe and free from toxic material. In order to prove the safety of both medicinal plant's extract, acute toxicity test is needed. The test consists of : LD50 value, behaviour, organ weight (OW), and organ index (OI) of Webster Swiss mice after feeding with ethanol extract of Detam-1 soybean (EEDS), ethanol extract of Jati Belanda (EEJB) and its combination. The aim of this research was to know the value of Lethal Dose (LD) 50, behavior, organ weight (OW), and organ index (OI) in Swiss Webster mice after administered of ethanol extract of Detam-1 soybean (EEDS), ethanol extract of Jati Belanda (EEJB) and their combination.

Methods: True experimental study with complete randomized design in accordance with BPOM 2014 was the methods of this study. Twenty Swiss Webster female mice were divided into four treatment groups. Group 1 (negative control), 2 EEDS (2,000 mg / kgBB), 3 (EEJB 2,000 mg / kgBW), and 4 (EEDS

and EEJB 1: 2 combination of 2000 mg / kgBW). OW and OI data were analyzed by independent t test with $\alpha = 0.05$.

Results: There were no symptom of mortality and toxicity in all groups, all of mice behave normally, statistically no significant differences in OW and OI of the eight major organs of all groups (p> 0.05) except lung, liver and spleen in group 2.

Conclusion: The LD50 value of EEDS, EEJB and their combinations entirely above 2,000 mg/kgBW, no changing on the behavior, OW and OI in mice which given very high dose of EEDS, EEJB and their combination.

Keywords: LD_{50}, behavior, organ weight, organ index, Detam-1 soybean, Jati Belanda