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HASIL AKREDITASI TERBITAN BERKALA ILMIAH PERIODE I TAHUN 2013

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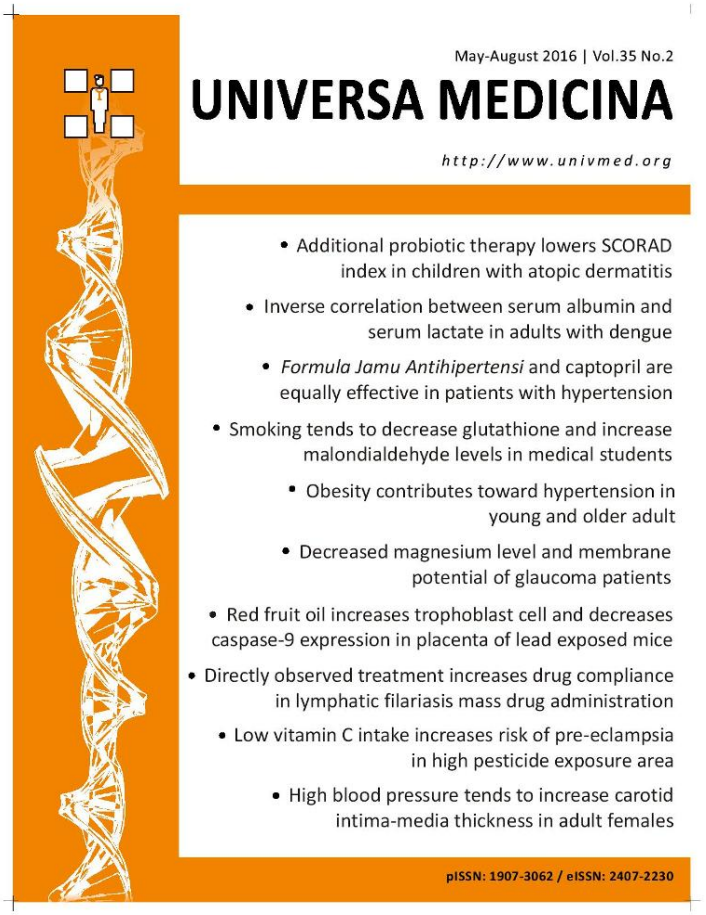

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The burden of the complications of diabetes mellitus (https://univmed.org/ejurnal/index.php/medicina/article/vi

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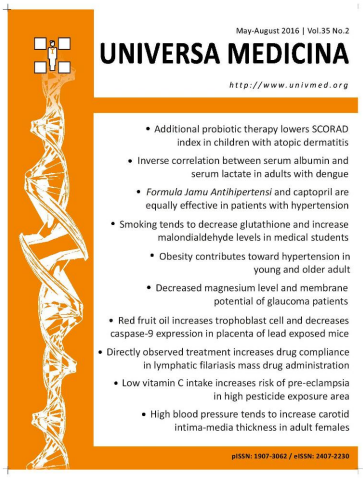

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Inverse correlation between serum albumin and serum lactate in adults with dengue

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ABSTRACT

BACKGROUND
Dengue infection is an acute viral infection, in the natural history of which plasma leakage may occur, resulting in shock followed by tissue hypoxia, with death as the final outcome if not treated properly. The purpose of this study was to determine the correlation of the hematocrit, serum albumin concentration, and the presence of pleural effusion or ascites, with hyperlactatemia in adult dengue patients.

METHODS
A cross-sectional study was conducted on 62 subjects. The inclusion criteria were: diagnosed dengue viral infection, age >14 years, fever during three consecutive days, and hyperlactatemia. Serum albumin was measured on an Advia 1800 analyzer using the bromocresol green method. The lactate oxidase method was used to determine serum lactate levels. Pleural effusion and/or ascites was determined using an ultrasound scanner (Xario SSA-660 A, Toshiba, Japan). The Pearson correlation test was used to analyze the data.

RESULTS
There was no significant correlation between the hematocrit (r=0.11; p=0.301), serum albumin (r=0.003;p=0.981), and pleural effusion or ascites (r=0.75; p=0.692) with serum lactate levels. However, in patients aged >30 years there was a significant inverse correlation between serum albumin and lactate levels (r =- 0.663;p=0.026).

CONCLUSION
This study demonstrated a significant inverse correlation between albumin and serum lactate levels in dengue patients aged > 30 years. This can aid in the early recognition and prompt management of at-risk patients to reduce morbidity and mortality.

Keywords: Dengue infection, serum lactate level, hematocrit, albumin, adult dengue patients

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Formula Jamu Antihipertensi and captopril are equally effective in patients with hypertension

Atina Hussaana*, Hadi Sarosa, Ulfah Dian Indrayani***, Chodidjah†, Bagas Widiyanto*, and Danis Pertiwi‡**

ABSTRACT

BACKGROUND

Hypertension is the main cause of morbidity and mortality associated with cardiovascular diseases. Many herbs/spices appear to have significant effects in favorably modulating high blood pressure. A *jamu* formulation containing 6 plant extracts, *Formula Jamu Antihipertensi* (FJA), has been described previously. This research study aimed to evaluate the effect of FJA as antihypertensive agent in mild to moderate hypertensive patients.

METHODS

This double-blind experimental study was conducted in 40 hypertensive patients, who were randomized into two groups. The first group was treated with oral administration of 2 g FJA and the second group 25 mg captopril daily for 4 weeks. Systolic and diastolic blood pressure as well as liver and kidney function were followed up every week. Independent-t test and two-way ANOVA were used to analyze the data with a level of significance of 0.05.

RESULTS

The results showed that after the treatment, FJA and captopril were capable of significantly decreasing systolic and diastolic blood pressure ($p < 0.05$). The decrease in systolic blood pressure between the two groups was identical ($p > 0.05$), while the decrease in diastolic blood pressure was greater in the FJA group than in the captopril group ($p < 0.05$).

CONCLUSION

From this study it may be concluded that administration of FJA for 4 weeks is equally effective as captopril in reducing systolic and diastolic blood pressure in patients with mild and moderate hypertension. Thus, natural plants and herbs can be our source of drugs, with fewer side effects and better bioavailability for treatment of hypertension in the future.

Keywords: *Jamu*, antihypertensives, captopril, hypertension patients

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Editorial

The burden of the complications of diabetes mellitus

Adi Hidayat
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Diabetes mellitus (DM) is an important global cause of mortality, morbidity, and health-system costs,[1,2] with significant increases in its prevalence and number of cases in the last 30 years. It constitutes one of the four non communicable diseases (NCDs) targeted for action by world leaders.According to WHO estimates, in 2014 there were 422 million adults with DM aged 18 years or older, with around half in the WHO South-East Asia and Western Pacific Regions.[3] The prevalence of DM and the number of adults with DM in low- and middle-income countries have over the last decade increased at a greater rate than in high-income countries. The global DM prevalence increased by more than 100% in men and by 60% in women, resulting in a predominance of males with DM in 2014 as compared with a higher DM female prevalence in 1980.[4]

In 2012, there were a total of 3.7 million deaths, of which 34% were in age groups below 70 years. Of these 3.7 million deaths, 1.5 million were caused by DM and 2.2 million by poorly controlled blood glucose, which increased the risks of cardiovascular and other diseases. The percentage of deaths under the age of 70 years caused by high blood glucose is higher in low- and middle-income countries than in high-income countries.[3]

In Indonesia, the 2007 and 2013 data reported by the Basic Health Research showed a prevalence of DM of 6.9% for 2013, which is twice its prevalence in 2007.[5]

According to the Noncommunicable Diseases Risk Factor Collaboration (NCD-RisC), the onset of type 2 DM should be prevented or delayed to reduce its global health and economic impact, since type 2 DM patients constitute the majority of cases worldwide. Overweight, obesity, and lack of physical activity account for a large proportion of the global burden of DM.[6] The burden of DM increases in proportion to its complications and therefore control measures are an important goal for the prevention of the complications of DM.

A number of factors may be noted that may be responsible for the higher increase in DM prevalence in low-income and middle-income countries as compared with high-income countries and the almost stationary DM prevalence in Europe, particularly in the northwester parts. One factor is the substantial and relatively greater increase in adiposity as an important risk factor for DM in many low-income and middle-income countries than in Europe and high-income Asia Pacific countries, especially in women.[7]

Another factor may be genetic susceptibility to DM or the occurrence of alterations in phenotype that are the result of inadequate fetal and childhood nutrition and growth.[4,8] A third factor may be that the better resourced health systems of Europe and other high income countries are able to effect an earlier diagnosis of DM in high risk individuals, and use lifestyle and dietary modification or drugs to prevent or delay its onset.[9]

The complications of poorly controlled DM frequently affect the patient's health adversely and are commonly life-threatening, with acute complications significantly contributing to

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Smoking tends to decrease glutathione and increase malondialdehyde levels in medical students

Safyudin* and Subandrate*

ABSTRACT

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BACKGROUND
Smoking is the act of introducing toxic substances into the body. Cigarette smoke contains chemicals that may cause several disorders, including cardiovascular disease, cancer, and chronic obstructive pulmonary disease. Toxic substances in cigarette smoke have the potential to increase free radicals, malondialdehyde (MDA) levels and to decrease endogenous antioxidant (glutathione/GSH) levels. This study aims to determine the relationship of smoking with plasma GSH and MDA levels in medical students.

METHODS
This study was analytical observational with cross-sectional approach. The study was conducted from April to December 2015. The subjects in this study were medical students, consisting of 20 smokers and 20 nonsmokers. Plasma GSH and MDA levels were determined biochemically using Sigma GSH Assay Kit and Sigma MDA Assay Kit. Data was analyzed using the independent t test.

RESULTS
The results showed that there was no significant difference between mean GSH in smokers (1.74 ± 0.91 μmol/L) and nonsmokers (2.42 ± 1.19 μmol/L) (p=0.441). Mean smokers MDA level of 2.06 ± 1.39 nmol/μL was not significantly different compared with mean nonsmokers MDA level (1.32 ± 0.90 nmol/μL) (p=0.092).

CONCLUSIONS
Smoking tends to decrease plasma GSH levels and increase plasma MDA levels in medical students. Smoking history could be evidence of oxidative stress and an impaired oxidant defense system. In particular, young smokers should quit promptly before health problems arise, so as to have the optimal benefits of cessation.

Keyword: Free radicals, GSH, MDA, smoking, medical students

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Additional probiotic therapy lowers SCORAD index in children with atopic dermatitis

Jessica Ekaputri*, Rita Evalina*, and Melda Deliana*

ABSTRACT

BACKGROUND

Atopic dermatitis (AD) is a common skin disease that is usually chronic, relapsing, causing pruritus and frequent in children. The pathogenesis of AD involves genetic, immunological and environmental factors causing skin barrier dysfunction and dysregulation of the immune system. Probiotic treatment has been claimed to offer several functional properties including stimulation of the immune system and plays an important role in AD. The objective of this study was to evaluate the effect of probiotic therapy on atopic dermatitis in children.

METHODS

A randomized controlled trial was conducted on 62 children suffering from AD from December 2015 to January 2016. AD severity was assessed based on the scoring of atopic dermatitis (SCORAD) index. Subjects were divided into two groups consisting of 32 and 30 children, the probiotic (probiotic + emollient) and control (emollient) groups, respectively. SCORAD index was re-evaluated after 2 weeks of therapy. The data was analyzed using Mann Whitney test.

RESULTS

After the intervention, the mean SCORAD index in the probiotic group was significantly much lower than the control group (18.09 ± 8.59 vs 23.21 ± 8.71; p=0.001). The mean decrease in SCORAD index in the probiotic group was 40.4 %, much higher than the control group 25.2%. The number needed to treat (NNT) score of probiotic treatment was 5.3.

CONCLUSION

The addition of probiotics to conventional therapy effectively lowers SCORAD index by 40.4% in atopic dermatitis. The impact of probiotics on SCORAD indices is thought to be attained by modification of the immunogenicity of potential allergens.

Keywords: Atopic dermatitis, SCORAD, probiotic, children

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Lampiran 5. *Ethical Clearance*

KOMISI ETIK PENELITIAN KESEHATAN (KEPK)
FAKULTAS KEDOKTERAN UNIVERSITAS DIPONEGORO
DAN RSUP dr KARIADI SEMARANG
Sekretariat : Kantor Dekanat FK Undip Lt.3
Jl. Dr. Soetomo 18. Semarang
Telp/Fax. 024-8318350

RSUP Dr. KARIADI

ETHICAL CLEARANCE
No. 051/EC/FK-RSDK/2016

Komisi Etik Penelitian Kesehatan Fakultas Kedokteran Universitas Diponegoro-RSUP. Dr. Kariadi Semarang, setelah membaca dan menelaah Usulan Penelitian dengan judul :

ASUPAN LEMAK YANG TINGGI, PROTEIN DAN ANTI OKSIDAN (VITAMIN A, C DAN E) YANG RENDAH SEBAGAI FAKTOR RISIKO PREEKLAMPSIA DI DAERAH DENGAN PAPARAN PESTISIDA TINGGI

Peneliti Utama : ***Rifatul Masrikhiyah***

Pembimbing : **1.** Dr. dr. Suhartono, M.Kes
2. dr. Martha I. Kartasurya, M.Sc, PhD

Penelitian : Dilaksanakan di Wilayah Kerja Puskesmas Kec. Brebes, Kec. Wanasari dan Kec. Bulakamba, Kab. Brebes, Provinsi Jawa Tengah

Setuju untuk dilaksanakan, dengan memperhatikan prinsip-prinsip yang dinyatakan dalam Deklarasi Helsinki 1975, yang diamended di Seoul 2008 dan Pedoman Nasional Etik Penelitian Kesehatan (PNEPK) Departemen Kesehatan RI 2011

Peneliti harus melampirkan 2 kopi lembar Informed Consent yang telah disetujui dan ditandatangani oleh peserta penelitian pada laporan penelitian.

Peneliti diwajibkan menyerahkan :
- Laporan kemajuan penelitian (*clinical trial*)
- Laporan kejadian efek samping jika ada
- Laporan ke KEPK jika penelitian sudah selesai & dilampiri Abstrak Penelitian

Semarang, 09 FEB 2016

Komisi Etik Penelitian Kesehatan
Fakultas Kedokteran Undip-RS. Dr. Kariadi
Ketua

KEPK
FK UNDIP
RS. Dr. KARIADI

Prof. Dr. dr. Suprihati, M.Sc, Sp.THT-KL(K)
NIP. 19500621 197703 2 001

Low Vitamin C intake increases risk of pre-eclampsia in high pesticide exposure area

by Martha Irene Kartasurya

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Low vitamin C intake increases risk of pre-eclampsia in high pesticide exposure area

Rifatul Masrikhiyah*, Suhartono, and Martha Irene Kartasurya*****

ABSTRACT

BACKGROUND

Pre-eclampsia is the largest direct cause (42%) of maternal mortality death in Brebes district in 2013. The cause of pre-eclampsia is not known with certainty, oxidative stress being one of its causes. The aim of this study was to determine macro- and micronutrient intakes that do not correspond to the needs, as pre-eclampsia risk factors in post-partum women.

METHODS

The research was an observational study of case control design. Study subjects were 20-35 year-old post partum women consisting of 55 cases (pre-eclampsia) and 55 controls (non-pre-eclampsia). Nutrient intakes were measured using semi-quantitative food frequency questionnaires and data on levels of pesticide exposure, body mass index (BMI), mid-upper arm circumference (MUAC) and education were collected from structured interviews. Data was analyzed by chi-square tests and multiple logistic regression.

RESULTS

There was no difference in age and MUAC between the cases and controls. Low vitamin C intake (OR: 20.93; 95% CI: 2.72 – 161.36), high polyunsaturated fatty acid intake (OR: 10.50; 95% CI: 2.47 – 44.57), and low vitamin E intake (OR: 8.57; 95% CI: 2.07 – 35.46) were pre-eclampsia risk factors after controled for pesticide exposure, BMI and education. Low vitamin C intake played the most important role in the incidence of preeclampsia.

CONCLUSION

Low vitamin C intake played the most important role toward pre-eclampsia. Greater caution is needed when issuing recommendations regarding the consumption of vitamin supplements in pregnancy, as high doses of some vitamins may be deleterious.

Keywords: Pre-eclampsia, vitamin C, vitamin E, polyunsturated fatty acids, pesticide exposure

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INTRODUCTION

Pre-eclampsia still constitutes a pubic health problem in developed and developing countries, contributing toward global maternal and perinatal morbidity and mortality.[1] Pre-eclampsia affects 5-10% of all global pregnancies. The prevalence of pre-eclampsia in developing countries reaches 16.7% and around 40-60% is estimated to contribute toward maternal mortality in developing countries.[2] The World Health Organization estimates that the incidence of pre-eclampsia is seven-fold higher in developing countries (2.8% of live births) than in developed countries (0.4%).[3]

According to the Health Service of Brebes district, in 2012 the direct causes of the maternal mortality rate (MMR) in this district were hemorrhage 22%, pre-eclampsia 42%, infection 8%, heart failure 14%, dyspnea 4%, ruptured ectopic pregnancy 2%, ectopic pregnancy 2%, post curettage 2% and others 4%.[4] Oxidative stress results from an imbalance between free radical production and the antioxidant defense system [5] and is one of the causes of pre-eclampsia. Nutrients may influence oxidative stress by increasing free radicals/decreasing antioxidants/providing substrates for the formation of free radicals.

A case-control study on 453 pregnant women (151 cases and 302 controls) showed that women with mid-upper arm circumference (MUAC) of ≥25.6 cm had two and a half times greater risk for pre-eclampsia than pregnant women with MUAC of <25.6 cm.[6] According to a study conducted by Kartasurya [7] on 200 pregnant/post partum women (50 pre-eclampsia cases and 150 controls), in women with pre-pregnancy body mass index (BMI) scores of >23 kg/m², the risk of pre-eclampsia was four and a half times greater than in women with pre-pregnancy BMI scores of <23 kg/m².

Lipids are involved in the generation of free radicals and polyunsaturated fatty acids (PUFA) tend to be oxidized by free radicals and reactive oxygen species (ROS). A high PUFA intake may render the organism more susceptible to lipid peroxidation, which is strongly suspected to play a important role in the causation of maternal endothelial dysfunction and the appearance of clinical symptoms of pre-eclampsia.[8-10] According to the study by Clausen et al.[11] an increased intake of PUFA in pregnant women increases the risk of pre-eclampsia.

Antioxidants may decrease the level of lipid peroxides by limiting or inactivating their formation. Free radicals may be treated by administration of antioxidants such as vitamins A, C and E. Low intakes of vitamins A, C and E may cause an imbalance between free radicals and antioxidants in the body. A previous study found that low intakes of vitamins A, C and E may increase the risk of pre-eclampsia.[12]

Since protein status affects glutathione concentrations, a low protein intake contributes toward oxidative stress, as a result of low glutathione concentrations. Low glutathione concentrations affect the antioxidant effects of glutathione itself, causing free radicals to become uncontrolled, thus resulting in oxidative stress. The results of a study in pregnant women with pre-eclampsia showed that the glutathione concentrations in their blood were lower than in normal pregnant women.[13]

A total of 104 pregnant women with pre-eclampsia and of 206 pregnant women at high risk of, but not suffering from, pre-eclampsia, were studied in second trimester pregnancies. This study showed that there was no relationship between nutritional intake and the development of pre-eclampsia (or other effects) when evaluated for 7 days.[14] A review and bivariate meta-analysis of 36 studies involving 1,699,073 pregnant women showed BMI to be a weak predictor of pre-eclampsia.[15]

Brebes district in Central Java is one of the largest producers of shallots *(bawang merah)* in Indonesia, and has a high pesticide utilization. Pesticide exposure may cause health disorders in pregnant women. The study conducted by Saldana

et al.[16] found that pesticide exposure is a risk factor of pre-eclampsia. Based on these facts the present study aimed to determine the macro- and micronutrient intakes that do not correspond to needs, as risk factors of pre-eclampsia in post-partum women residing in areas of high pesticide exposure.

The present study differs from previous studies in the location/site of the study, since it was conducted in Brebes district in an area of high pesticide exposure, where no previous studies had been conducted on the intakes of lipids, proteins and antioxidants (vitamins A, C and E) in relation to pre-eclampsia.

METHODS

Research design

This study was of observational case control design and was conducted from February – March 2016 at 3 puskesmas (public health centers) in Brebes district, Central Java, i.e. puskesmas Brebes, Wanasari and Bulakamba.

Research subjects

The subjects in this study were women of productive age (20-35 years) who were up to 3 months post partum. The number of subjects in this study was 110, consisting of 55 cases and 55 controls. This number was obtained based on total sampling in the three puskesmas (Brebes, Wanasari and Bulakamba), where 55 subjects were found for the group of cases and 55 subjects for the group of controls. The inclusion criteria were women of productive age (20-35 years), agreeing to participate in the study, being 3 months post partum and diagnosed as having had pre-eclampsia in pregnancy (as cases), normal pregnant women (as controls), and residing in the catchment area of Bulakamba, Wanasari and Brebes subdistricts, Brebes district. The exclusion criteria for the subjects in this study were women with twin pregnancies and with diabetes mellitus. Pre-eclampsia was diagnosed by health personnel by the criteria of a blood pressure of ≥140/90 mmHg after 20 weeks of pregnancy and of proteinuria.

Anthropometric measurements

Measurement of BMI and MUAC of the women before pregnancy was performed by health personnel. The BMI of women before pregnancy was obtained from pre-pregnancy body weight divided by height, while MUAC was measured at the start of pregnancy.

Nutrient intake measurements

Nutrient intakes were obtained from interviews conducted by the investigators using the semi-quantitative food frequency questionnaire. The assessed nutrient intakes comprised total lipids, PUFA, and vitamins A, C and E. The nutrient adequacy level was calculated using the Nutrisurvey 2007 program and based on the Indonesian Recommended Dietary Allowances (IRDA) of 2013. The cut-off point for low protein intake was categorized at <80% of IRDA and for adequate protein intake at ≥80% of IRDA.[17] Low intake of vitamins A, C and E was categorized at <77% of IRDA and adequate intake at ≥77% of IRDA.[18] The intakes of PUFA and total lipids were categorized as high at >110% of IRDA and adequate at ≤110% of IRDA.[17]

Exposure to pesticides

The level of pesticide exposure was obtained through structured interviews, using a list of questions for the interviews and forms for willingness to participate in the study. The level of pesticide exposure was divided into two categories, i.e. mild and severe, with total scores of 1-11 and 12-22, respectively.

Statistical analysis

Chi square and independent t tests were used to determine differences between cases and controls. Simple logistic regression and multiple logistic regression were used to examine the risk factors of pre-eclampsia. The level of significance used was 0.05.

Ethical clearance

This study was conducted after obtaining approval of the ethics commission under no. 051/EC/FK-RSDK/2016.

Table 1. Characteristics of study subjects, by cases (n=55) and controls (n=55)

Type	Cases	Controls	p
Age (yrs)	27.33 ± 4.98	26.33 ± 3.94	0.245 *
Education (n,%)			
Low	51 (92.7)	44 (80.0)	0.096 **
High	4 (7.3)	11 (20.0)	

*independent T-test; ** Chi-square test

RESULTS

Table 1 shows that with regard to age and level of education of the study subjects, there were no significant differences between cases and controls (p=0.245 and p=0.096).

Table 2 shows the results of the analysis of pre-eclampsia risk factors. The results of simple logistic regression showed that there was a relationship between intakes of nutrients (protein, PUFA, and vitamins A, C and E), BMI, and level of pesticide exposure with the incidence of pre-eclampsia. Low intake of protein (OR: 5.37; 95% CI: 1.43 – 20.08), high intake of PUFA (>110% of IRDA) (OR: 6.55; 95% CI: 2.62 – 16.41), low intake of vitamin A (OR: 4.84; 95% CI: 1.28 – 18.26), low intake of vitamin C (OR: 4.35; 95% CI: 1.33 – 14.24), low intake of vitamin E (OR: 12; 95% CI: 4.15 – 34.69), BMI >23 kg/m^2 (OR: 2.50; 95% CI: 1.10 – 5.67), severe pesticide exposure (OR: 3.34; 95% CI: 1.26 – 8.82) are risk factors of the incidence of pre-eclampsia.

The variables that were used as candidates in the multiple logistic regression analysis were those that were significant in the simple logistic regression analysis. These comprised the intakes of protein, PUFA, vitamin A, vitamin C, vitamin E, pesticide exposure, and BMI.

Table 2. Simple logistic regression analysis of risk factors of pre-eclampsia

Risk factor	Cases (n,%)	Controls (n,%)	p	OR (95% CI)
Level of protein intake (g)				
Low < 80% of IRDA	13 (23.6)	3 (5.5)	0.015	5.37
Adequate ≥80% of IRDA	42 (76.4)	52 (94.5)		(1.43 – 20.08)
Level of intake of total lipids (g)				
High >110% of IRDA	21 (38.2)	27 (49.1)	0.346	0.64
Adequate ≤110% of IRDA	34 (61.8)	28 (50.9)		(0.30 – 1.37)
Level of intake of polyunsaturated fatty acids (PUFA) (g)				
High >110% of IRDA	47 (85.5)	26 (47.3)	0.001	6.55
Adequate ≤110% of IRDA	8 (14.5)	29 (52.7)		(2.62 – 16.41)
Level of vitamin A intake (mcg)				
Low < 77% of IRDA	12 (21.8)	3 (5.5)	0.026	4.84
Adequate ≥77% of IRDA	43 (78.2)	52 (94.5)		(1.28 – 18.26)
Level of vitamin C intake (mg)				
Low < 77% of IRDA	14 (25.5)	4 (7.3)	0.020	4.35
Adequate ≥77% of IRDA	41 (74.5)	51 (92.7)		(1.33 – 14.24)
Level of vitamin E intake (mg)				
Low < 77% of IRDA	50 (90.9)	25 (45.5)	0.001	12.00
Adequate ≥77% of IRDA	5 (9.1)	30 (54.5)		(4.15 – 34.69)
Body mass index (kg/m^2)				
≥23.0	24 (43.6)	13 (23.6)	0.044	2.50
<23.0	31 (56.4)	42 (76.4)		(1.10 – 5.67)
Level of pesticide exposure				
Severe	18 (32.7)	7 (12.7)	0.023	3.34
Mild	37 (67.3)	48 (87.3)		(1.26 – 8.82)

IRDA: Indonesian Recommended Dietary Allowances

Table 3. Multiple logistic regression for risk factors of pre-eclampsia

	OR	95% CI	p
Vitamin C intake	20.93	2.72 – 161.36	0.001
Polyunsaturated fatty acid intake	10.50	2.47 - 44.57	0.001
Vitamin E intake	8.57	2.07 – 35.46	0.003
Pesticide exposure	5.83	1.31 – 25.94	0.021
Vitamin A intake	8.83	0.98 – 79.03	0.052
Protein intake	4.93	0.97 – 25.14	0.055
Body mass index	2.78	0.81 – 9.55	0.105

A low vitamin C intake was the risk factor with the most important role on the incidence of pre-eclampsia (OR: 20.93; 95% CI: 2.72-161.36). Other risk factors that also played a role on the incidence of pre-eclampsia were high intake of PUFA(OR: 10.50; 95% CI: 2.47-44.57), low vitamin E intake (OR: 8.57; 95% CI: 2.07 –35.46), and severe pesticide exposure (OR: 5.83; 95% CI: 1.31 – 25.94) (Table 3).

DISCUSSION

Low protein intake was a risk factor for the incidence of pre-eclampsia, but was statistically not significant. The results of this study are in agreement with a case control study conducted on 113 women with gestational hypertension and 150 healthy pregnant women in Tehran, that did not show any significant differences in protein intake between the two groups.[19] However, the results of our study differed from those of one study on pregnant or post partum women in Semarang and another study on pregnant women in Makassar, with and without pre-eclampsia, where it was found that low protein intake was a risk factor of pre-eclampsia in pregnancy.[7,20] Similarly, a study that was conducted in one Indian hospital found that low protein intake was a risk factor of pre-eclampsia.[21]

Low protein intake contributes toward oxidative stress that subseaquently causes pre-eclampsia. Protein status affects glutathione concentration, where low protein intake leads to low glutathione concentrations. Glutathione is the substrate for the enzyme catalyzing the reduction of ROS and free radicals. Glutathione has an important antioxidant capacity and plays an essential role in the detoxification of endogeneous metabolic products, including lipid peroxides, and of xenobiotic compounds.[22] Low glutathione concentrations increase oxidative stress that causes pre-eclampsia.

High intake of PUFA (>110% of IRDA) is a risk factor of the incidence of pre-eclampsia. This is in line with the study by Claudia et al.[11] who found that high intake of PUFA in pregnant women increased the risk of pre-eclampsia.

Lipids are involved in the generation of free radicals. PUFA in lipid membranes are the main targets of lipid peroxidation by ROS. PUFA are degraded by free radicals, thus producing end products termed malondialdehydes (MDA), which may be used for determining the level of oxidative damage caused by lipid peroxidation. Therefore, high PUFA intake may render the organism more susceptible to lipid peroxidation. Lipid peroxidation is strongly suspected to play an important role in causing endothelial dysfunction and the development of clinical symptoms of pre-eclampsia.[8-10]

The results of our study showed that low intake of vitamin A, vitamin E and vitamin C are risk factors for the incidence of pre-eclampsia. The results of this study agree with those of a study conducted in Yogyakarta, where it was found that pregnant women with a low consumption of vitamins A, C, and E, and beta carotene were at risk for pre-eclampsia.[12]

Vitamins A, C and E act as antioxidants by donating electrons to free radicals for binding to single (unpaired) electrons of free radicals without becoming new free radicals. Free radicals may be treated with the administration

of antioxidants. An imbalance between free radicals and antioxidants causes oxidative stress.[5] Oxidative stress is considered an important element in the pathogenesis of pre-eclampsia resulting in endothelial dysfunction and ultimately inducing the syndrome of pre-eclampsia.[23]

The results of our study show that low vitamin C intake increases the risk of pre-clampsia. These results are consistent with those of a cohort study conducted on Danish pregnant women, showing that the risk of severe pre-eclampsia/eclampsia may decrease with increasing vitamin C intake.[25] However, a review of twenty-nine trials involving 24,300 women who took vitamin C supplements during pregnancy concluded that vitamin C supplements do not prevent pregnancy problems, including stillbirth, neonatal mortality, preterm birth, pre-eclampsia or low birthweight babies.[26] There is no agreement on the optimal gestational time for measurement of vitamin C intake. However, the second half of pregnancy may reflect vitamin C intake in placental development, since trophoblast invasion is completed by this time. The time of complete placentation is not generally considered to be the most probable gestational time point associated with oxidative stress.[25]

In the present study, severe level of pesticide exposure is a risk factor for the incidence of pre-eclampsia, which agrees with the results of a study in the USA where it was found that women who were exposed to pesticides during pregnancy had a greater risk of pre-eclampsia than did pregnant women who were not exposed to pesticides.[16]

Pesticides are one of the sources of free radicals. When free radical production increases and exceeds the capacity of the antioxidant defense system in the body, a condition occurs called oxidative stress.[5] Oxidative stress is considered an important element in the pathogenesis of pre-eclampsia that results in endothelial dysfunction and ultimately causes the syndrome of pre-eclampsia, although its role has not yet been completely analyzed.[23]

A limitation of this study was that only nutrient intakes, pesticide exposure and BMI were measured, whereas there are still many other uncontrollable or unavoidable factors that affect pre-eclampsia in pregnant women of productive age, such as immunity, cardiovascular adaptation, and genetic factors. For assessment of nutrient intakes, this study used the semi-quantitaive FFQ, which may still contain information bias or recall bias. In this study we did not measure serum NO or MDA concentrations to determine the level of oxidative stress in the women. The public health implications of our findings are that they confirm the current dietary recommendations for intakes of vitamin A, C, E in pregnancy.

CONCLUSIONS

Low vitamin C intake plays a most important role toward pre-eclampsia. However, greater caution is also needed in recommending the consumption of vitamin supplements in pregnancy, as high doses of some vitamins may be deleterious.

CONFLICT OF INTERESTS

There are no conflicts of interest (financial, personal, political, intellectual or religious).

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REFERENCES

1. National High Blood Pressure Education Program Working Group on High Blood Pressure in Pregnancy. Report of the national high blood pressure education program working group on high blood pressure in pregnancy. Am J Obstet Gynecol 2000;183:S1-22.

2. Osungbade KO, Ige OK. Public health perspectives of pre-eclampsia in developing countries: implication for health system strengthening. J Pregnancy 2011. Article ID481095, 6 pages. http://dx.doi.org/10.1155/2011/481095.
3. Trogstad L, Magnus P, Skjærven R, et al. Previous abortions and risk of pre-eclampsia. Int J Epidemiol 2008;37:1333-40.
4. World Health Organization. Make every mother and child count, in the world health report 2005. Geneva: World Health Organization;2005.
5. Dinas Kesehatan Kabupaten Brebes. Angka kematian ibu (AKI). Laporan Dinas Kesehatan Kabupaten Brebes. Brebes;2013.
6. Powers SK, Jackson MJ. Exercise-induced oxidative stress: cellular mechanisms and impact on muscle force production. J Physiol Rev 2008; 88:1243-12.
7. Endeshaw M, Ambaw F, Aragaw A, et al. Effect of maternal nutrition and dietary habits on pre-eclampsia: a case-control study. Int J Clin Med 2014;5:1405-16.
8. Kartasurya MI. Pre-eclampsia risk factors of pregnant women in Semarang, Indonesia. IJSBAR 2015;22:31-7.
9. Hung TH, Bruton GJ. Hypoxia and reoxygenation: a possible mechanism for placental oxidative stress in pre-eclampsia. Taiwanese J Obstet Gynecol 2006;43:189-200.
10. Borekci B, Aksoy H, Ozturk N, et al. Correlation between calprotectin and oxidized LDL in pre-eclampsia. Turkey J Med Sci 2009;39:191-5.
11. Gupta S, Aziz N, Sekhon L, et al. Lipid peroxidation and antioxidant status in pre-eclampsia : a systematic review. Obstet Gynecol Survey 2009;64:750-9.
12. Clausen T, Slott M, Solvoll K, et al. High intake of energy, sucrose, and polyunsaturated fatty acids is associated with increased risk of pre-eclampsia. Am J Obstet Gynecol 2001;185:451–8.
13. Nofrisa MP, Hartini TNS, Hakimi M. Kurang asupan vitamin A, C, E dan beta karoten meningkatkan kejadian preeklampsia di RSUP dr. Sardjito, Yogyakarta. Gizi Indon 2010;33: 136-42.
14. Rani NA, Naidu JN, Krishnamma. Evaluation of nitric oxide and reduced glutathione levels in pre-eclampsia. IJBRITISH 2014;1:13-7.
15. Al-Ahdab MA. The relationship between dietary intake and pre-eclampsia. J Am Sci 2013;9:185-203.
16. Cnossen JS, Leeflang MMG, de Haan EE, et al. Accuracy of body mass index in predicting pre-eclampsia: bivariate meta-analysis. BJOG 2007;114:1477-85.
17. Saldana TM, Basso O, Baird DD, et al. Pesticide exposure and hypertensive disorders during pregnancy. Environ Health Perspect 2009;117: 1393-6.
18. Hardinsyah. Angka kecukupan energi, protein, lemak dan serat makanan. Prosiding Widyakarya Pangan dan Gizi VIII; 2004 Mei 17-19; Jakarta; 2004 .p.323-27.
19. Gibson RS. Principle of nutritional and assessment. 2nd ed. New York: Oxford University Press;2005.
20. Kazemian E, Dorosty-Motlagh AR, Sotoudeh G, et al. Nutritional status of women with gestational hypertension compared with normal pregnant women. Hypertens Pregnancy 2013;32:146–156. DOI: 10.3109/10641955.2013.784782.
21. Nuryani, Ade AM, Citrakesumasari, et al. Hubungan pola makan, sosial ekonomi, antenatal care dan karakteristik ibu hamil dengan preeklampsia di kota Makassar. Media Gizi Masyarakat Indonesia 2013;2:104-12
22. Bej P, Chhabra P, Sharma AK, et al. Determination of risk factors for pre-eclampsia and eclampsia in a tertiary hospital of India: a case control study. J Family Med Prim Care 2013;2:371–5.
23. Lee DH, Steffes MW, Jacobs DR Jr. Can persistent organic pollutants explain the association between serum gamma glutamyl transferase and type 2 diabetes? Diabetologia 2008;51:402–7.
24. Cindrova-Davies T. Gabor Than award lecture 2008: Pre-eclampsia – from placental oxidative stress to maternal endothelial dysfunction. Placenta 2009;23:55-65.
25. Klemmensen AK, Tabor A, Østerdal ML, et al. Intake of vitamin C and E in pregnancy and risk of pre-eclampsia: prospective study among 57,346 women. BJOG 2009;116:964–74.
26. Rumbold A, Ota E, Nagata C, et al. Vitamin C supplementation in pregnancy. Cochrane Database of Systematic Reviews 2015, Issue 9. Art. No.: CD004072. DOI: 10.1002/14651858.CD004072.pub3.

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