

## ABSTRAK

**PENDAHULUAN:** Stres oksidatif dan disfungsi endotel berperan penting dalam patogenesis preeklampsia. Stres oksidatif terjadi karena ketidakseimbangan antara prooksidan dan antioksidan. DHA memiliki sifat antiinflamasi dan antioksidan yang dapat membantu mengurangi stres oksidatif, meningkatkan fungsi endotel, serta mendukung pertumbuhan dan perkembangan janin. Saat ini belum ada konsensus atau penetapan nilai ambang batas (*cut-off*) kadar DHA yang dapat digunakan secara klinis untuk prediksi atau skrining preeklampsia.

**TUJUAN:** Mengetahui perbedaan kadar DHA pada kehamilan normotensi dan preeklampsia.

**METODE:** Penelitian *cross sectional* di RSUP dr. Kariadi Semarang dan RS Jejarung melibatkan 44 ibu hamil preeklampsia dan 44 ibu hamil normotensi. Evaluasi dilakukan terhadap kadar DHA serum. Analisis dilakukan menggunakan uji Independent T-test, Mann Whitney U, Chi-square, Fisher exact dan regresi logistik biner metode *backward* dengan hasil signifikan  $p < 0,05$

**HASIL:** Kadar DHA secara signifikan lebih rendah didapatkan pada ibu preeklampsia dibandingkan ibu normotensi ( $105,59 \pm 47,04$  vs  $187,38 \pm 203,04$ ;  $p < 0,001$ ). Ibu hamil dengan kadar DHA  $< 102,35 \mu\text{g/L}$  memiliki risiko 2,30x (PR 2,30; CI95% 1,47 – 3,59) lebih tinggi untuk mengalami preeklampsia dibandingkan ibu hamil dengan kadar DHA  $> 102,35 \mu\text{g/mL}$ . Kadar DHA  $< 102,35 \mu\text{g/mL}$  memiliki sensitivitas 63,64%, spesifisitas 77,27%, *positive likelihood ratio* 2,80, *negative likelihood ratio* 0,47, *positive predictive value* 73,68%, *negative predictive value* 68,00 % dan akurasi 70,45% dalam menentukan kejadian preeklampsia. Berat badan ( $p=0,014$ ), indeks massa tubuh ( $p=0,002$ ), tingkat pendidikan ( $p=0,011$ ), riwayat preeklampsia ( $p < 0,001$ ) dan riwayat penyakit jantung ( $p < 0,001$ ) menjadi faktor risiko kejadian preeklampsia.

**SIMPULAN:** Terdapat perbedaan kadar DHA antara kehamilan normotensi dan preeklampsia.

**Kata kunci:** *docosahexaenoic acid*, preeklampsia, prediktor

## ABSTRACT

**INTRODUCTION:** Oxidative stress and endothelial dysfunction play a key role in the pathogenesis of preeclampsia. Oxidative stress occurs due to an imbalance between prooxidants and antioxidants. DHA has anti-inflammatory and antioxidant properties that can help reduce oxidative stress, improve endothelial function, and support fetal growth and development. Currently, there is no consensus or established cut-off value for DHA levels that can be used clinically for predicting or screening for preeclampsia.

**AIM:** To know the difference in DHA levels in normotensive and preeclamptic pregnancies.

**METHODS:** A cross-sectional study at Dr. Kariadi General Hospital in Semarang and Jejaring Hospital involved 44 pregnant women with preeclampsia and 44 normotensive pregnant women. Serum DHA levels were evaluated. Analysis was performed using the Independent T-test, Mann-Whitney U, Chi-square, Fisher exact test, and backward binary logistic regression, with significant results of  $p < 0,05$ .

**RESULTS:** DHA levels were significantly lower in preeclamptic mothers compared to normotensive mothers ( $105,59 \pm 47,04$  vs  $187,38 \pm 203,04$ ;  $p < 0,001$ ). Pregnant women with DHA levels  $< 102,35 \mu\text{g/mL}$  had a 2,30x (PR 2,30; 95%CI 1,47 – 3,59) higher risk of experiencing preeclampsia compared to pregnant women with DHA levels  $> 102,35 \mu\text{g/mL}$ . DHA levels  $< 102,35 \mu\text{g/mL}$  have a sensitivity of 63.64%, specificity of 77.27%, positive likelihood ratio of 2.80, negative likelihood ratio of 0.47, positive predictive value of 73.68%, negative predictive value of 68.00% and accuracy of 70.45% in determining the incidence of preeclampsia. Body weight ( $p = 0,014$ ), body mass index ( $p = 0,002$ ), education level ( $p = 0,011$ ), history of preeclampsia ( $p < 0,001$ ) and history of heart disease ( $p < 0,001$ ) were risk factors for preeclampsia.

**CONCLUSION:** There are differences in DHA levels between normotensive and preeclamptic pregnancies.

**Keywords:** docosahexaenoic acid, preeclampsia, predictors

