PENGARUH SUPLEMEN ASAM LEMAK OMEGA-3 DAN VITAMIN E TERHADAP KADAR *PLACENTAL APOPTOSIS MARKER* PADA TIKUS PUTIH (*RATTUS NORVEGICUS*) MODEL PRE EKLAMPSIA

TESIS

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ABSTRAK

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Pre eklampsia telah dikaitkan dengan peningkatan apoptosis pada plasenta. Asam lemak omega-3 dan vitamin E berperan dalam mempertahankan membran sel, mencegah stress oksidatif dan menghambat produksi sitokin proinflamasi. Tujuan penelitian ini adalah untuk mengetahui pengaruh suplemen omega-3 dan vitamin E terhadap kadar BCL-2 dan BAX pada plasenta tikus model PE.

Penelitian ini dilaksanakan di animal house dan Laboratorium Biomedik Fakultas Kedokteran Universitas Andalas Padang. Jenis penelitian ini adalah eksperimental dengan rancangan *post test only control group design*. Sebanyak 35 ekor tikus bunting dibagi menjadi 5 kelompok. Kelompok K- tanpa perlakuan, kelompok K+ diberi L-NAME, kelompok P1 diberi L-NAME + omega-3, kelompok P2 diberi L-NAME + vitamin E serta kelompok P3 yang diberi L-NAME + omega-3 + vitamin E dengan dosis L-NAME 50mg/kgBB peroral, omega-3 300mg dan vitamin E 300mg. Pada hari ke-19, kehamilan diterminasi dan jaringan plasenta diambil untuk pemeriksaan kadar BCL-2 dan BAX menggunakan metode ELISA. Nornalitas data diuji dengan *Shaphiro Wilk* kemudian dianalisis dengan *one way anova* dan *post hoc test LSD*.

Hasil; rerata kadar BCL-2 yakni, K- =62,49 ng/mg, K+ =50,64 ng/mg, P1 =58,79 ng/mg, P2 =53,70 ng/mg dan P3 =70,10 ng/mg. Rerata kadar BAX didapat K- =72,06 ng/mg, K+ =78,61 ng/mg, P1 =73,71 ng/mg, P2 =74,31 ng/mg dan P3 =71,63 ng/mg. Hasil analisis dengan *One Way Anova* didapatkan pengaruh suplemen omega-3 dan vitamin E terhadap kadar BCL-2 (p=0,000), terhadap kadar BAX (p=0,001).

Kesimpulan; suplementasi Omega-3 (DHA 120 mg, EPA 180 mg) dan vitamin E (α-tokoferol 300 iu) meningkatkan kadar BCL-2 dan menurunkan BAX pada tikus model pre eklampsia.

Kata Kunci : Omega-3, Vitamin E, BCL-2, BAX, Pre eklampsia

ABSTRACT

OMEGA-3 AND VITAMIN E SUPLEMENTATION EFFECT TO RATTUS NORVEGICUS PLACENTAL APOPTOSIS MARKER: PRE ECLAMPSIA MODEL

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Pre-eclampsia has been associated with increased apoptosis in the placenta. Omega-3 fatty acids and vitamin E had beneficial fuction to maintain cell membranes, prevent oxidative stress and inhibit the production of proinflammatory cytokines. The purpose of the study was to determine the effect of omega-3 and vitamin E supplement to BCL-2 and BAX on PE rats model.

This research has worked out at the animal house and Biomedical Laboratory of the Medical Faculty, Andalas University. The design of this research was experimental study with post test only control group design. There were 35 pregnant rats were divided into 5 groups. Group K- without treatment, group K+ was given L-NAME, group P1 was given L-NAME + omega-3, group P2 was given L-NAME + vitamin E and group P3 was given L-NAME + omega-3 + vitamin E. At the 19th day of gestation, the pregnancy was terminated and the placental tissue was collected for examining BCL-2 and BAX levels by using ELISA kit. The data normality were examined by Shapiro Wilk and then analyzed by one way ANOVA and post hoc test LSD.

Results; the average levels of BCL-2 in each group were K- 62.49 ng/mg, K+ 50.64 ng/mg, P1 58.79 ng/mg, P2 53.70 ng/mg and P3 70.10 ng/mg. The average BAX levels obtained were K- 72.06 ng/mg, K+ 78.61 ng/mg, P1 73.71 ng/mg, P2 74.31 ng/mg and P3 71.63 ng/mg. The analysis result by one way annova were omega-3 and vitamin E supplements on BCL-2 levels (p=0.000) and BAX levels (p=0.001).

Conclusion; omega-3 (DHA 120 mg, EPA 180 mg) and vitamin E (α-tocopherol 300 iu) suplement increased BCL-2 level and decreased BAX on pre-eclampsia rats model.

Keywords: Omega-3, Vitamin E, BCL-2, BAX, Pre-eclampsia