

HUBUNGAN KADAR TIMBAL DENGAN KADAR *NITRIC OXIDE* (NO) PADA IBU HAMIL PREEKLAMPSIA

TESIS



Pembimbing 1 : Prof. Dr. dr. Yusrawati, Sp.OG(K)
Pembimbing 2 : Prof. Dr. Arni Amir, MS

RINA OKTAVIANA
1820332013

**PROGRAM STUDI KEBIDANAN PROGRAM MAGISTER
PASCASARJANA FAKULTAS KEDOKTERAN
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ABSTRAK

Hubungan Kadar Timbal Dengan Kadar *Nitric Oxide* (NO) Ibu Hamil Preeklampsia

RINA OKTAVIANA

Salah satu logam berbahaya yang berada dilingkungan sekitar adalah logam timbal. Kadar timbal dalam darah yang tinggi dikaitkan dengan peningkatan risiko preeklampsia, timbal akan menyebabkan stres oksidatif dan mengalami penurunan produksi NO. Penelitian ini bertujuan untuk mengetahui hubungan kadar timbal dengan kadar NO pada ibu hamil preeklampsia.

Penelitian ini merupakan penelitian survei analitik, dengan rancangan *cross sectional*. Sampel diteliti sebanyak 99 orang ibu hamil, 33 orang ibu hamil normal yang tinggal yang tinggal radius >10km, 33 orang preeklampsia yang tinggal radius \leq 10km dan 33 orang preeklampsia yang tinggal radius >10km. Kadar timbal diperiksa menggunakan metode AAS dan Kadar NO diperiksa menggunakan metode ELISA. Analisis data menggunakan uji korelasi *Spearman* dan analisis regresi logistic.

Hasil penelitian ini median kadar timbal pada preeklampsia \leq 10km adalah 26,23 $\mu\text{g/dL}$, dan median kadar timbal preeklampsia >10km adalah 23,52 $\mu\text{g/dL}$. Median kadar NO preeklampsia \leq 10km adalah 22,50 $\mu\text{mol/L}$, median kadar NO preeklampsia >10km adalah 28,00 $\mu\text{mol/L}$. Terdapat hubungan kadar timbal dengan kadar NO pada preeklampsia \leq 10km, diperoleh nilai $r = -0,601$ dan nilai $p < 0,001$, pada preeklampsia >10km tidak terdapat hubungan dengan nilai $p > 0.500$ dan kekuatan korelasi sangat lemah. Hasil analisis multivariat penurunan kadar NO preeklampsia yang memiliki kadar timbal tinggi adalah 2 kali dibandingkan ibu hamil preeklampsia dengan kadar timbal normal dengan 95% CI (0.652-6.362) setelah dikontrol variabel radius tempat tinggal, status merokok dan lingkungan tempat tinggal.

Kesimpulan terdapat hubungan kadar timbal dengan kadar NO pada ibu hamil preeklampsia.

Kata Kunci : Timbal, NO, Preeklampsia

ABSTRACT

RELATIONSHIP BETWEEN LEAD LEVELS AND NITRIC OXIDE (NO) LEVELS FOR PREECLAMPSIA PREECLAMPSIA

Rina Oktaviana

One of the dangerous metals in the surrounding environment is lead metal. High blood lead levels are associated with an increased risk of preeclampsia, lead will cause oxidative stress and decrease NO production. This study aims to determine the relationship between lead levels and NO levels in preeclamptic pregnant women.

This research is an analytical survey research, with a cross sectional design. The samples studied were 99 pregnant women, 33 normal pregnant women living in a radius of >10km, 33 preeclampsia living in a radius of ≤ 10 km and 33 preeclampsia living in a radius of >10km. Lead levels were checked using the AAS method and NO levels were checked using the ELISA method. Data analysis used Spearman correlation test and logistic regression analysis.

The results of this study were the median lead level in preeclampsia ≤ 10 km was 26.23 g/dL, and the median lead level in preeclampsia >10km was 23.52 g/dL. The median NO level in preeclampsia ≤ 10 km was 22.50 $\mu\text{mol/L}$, the median NO level in preeclampsia >10km was 28.00 $\mu\text{mol/L}$. There is a relationship between lead levels and NO levels in preeclampsia ≤ 10 km, obtained r value = -0.601 and p value < 0.001, in preeclampsia >10 km there is no relationship with p value > 0.500 and the strength of the correlation is very weak. The results of the multivariate analysis of the decrease in NO levels in preeclampsia with high lead levels were 2 times compared to preeclampsia pregnant women with normal lead levels with 95% CI (0.652-6.362) after controlling for variables of residence distance, smoking status and living environment.

The conclusion is that there is a relationship between lead levels and NO levels in preeclamptic pregnant women.

Keywords: Lead, NO, Preeclampsia