

**PERBEDAAN KADAR ZINK DAN TEMBAGA PADA DARAH  
TALI PUSAT NEONATUS NORMAL DAN PERTUMBUHAN  
JANIN TERHAMBAT**

**TESIS**

**OLEH :**

**MELDA AMALIA  
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**Pembimbing :**

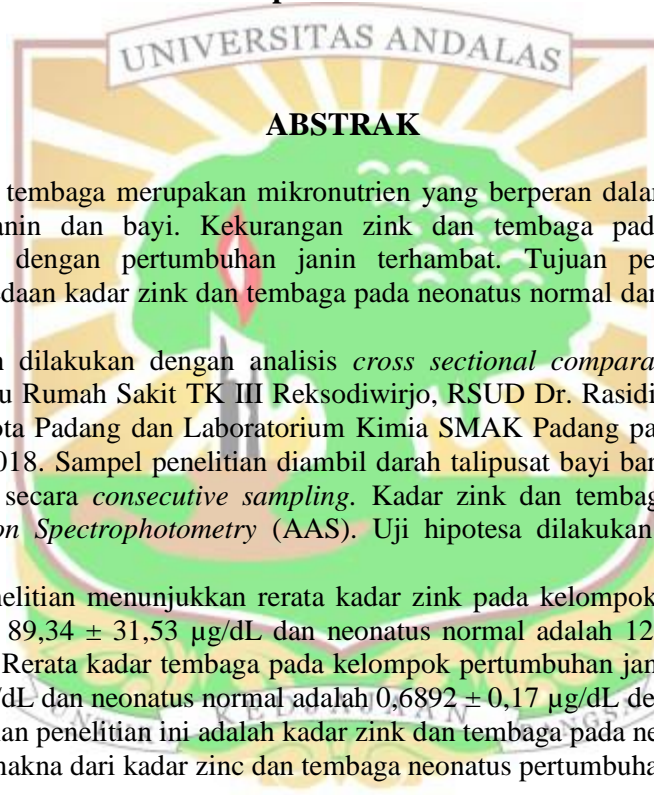
**Prof. Dr. dr. Yusrawati, Sp.OG (K)  
dr. Rauza Sukma Rita, Ph.D**

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**PROGRAM PASCASARJANA UNIVERSITAS ANDALAS  
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MELDA AMALIA**

**Perbedaan Kadar Zink Dan Tembaga pada Darah Tali Pusat Neonatus Normal dan Pertumbuhan Janin Terhambat**

**121 Halaman + 10 Tabel + 11 Lampiran**



Zink dan tembaga merupakan mikronutrien yang berperan dalam pertumbuhan dan perkembangan janin dan bayi. Kekurangan zink dan tembaga pada ibu hamil dapat melahirkan bayi dengan pertumbuhan janin terhambat. Tujuan penelitian ini adalah mengetahui perbedaan kadar zink dan tembaga pada neonatus normal dan pertumbuhan janin terhambat.

Penelitian dilakukan dengan analisis *cross sectional comparative*, dilakukan tiga Rumah Sakit yaitu Rumah Sakit TK III Reksodiwirjo, RSUD Dr. Rasidin, dan Rumah Sakit Bayangkara di kota Padang dan Laboratorium Kimia SMAK Padang pada bulan November 2016 – Januari 2018. Sampel penelitian diambil darah talipusat bayi baru lahir sebanyak 60 orang responden secara *consecutive sampling*. Kadar zink dan tembaga diperiksa dengan *Atomic Absorption Spectrophotometry* (AAS). Uji hipotesa dilakukan dengan uji t tidak berpasangan.

Hasil penelitian menunjukkan rerata kadar zink pada kelompok pertumbuhan janin terhambat adalah  $89,34 \pm 31,53$   $\mu\text{g/dL}$  dan neonatus normal adalah  $122,703 \pm 39,3$   $\mu\text{g/dL}$  dengan  $p = 0,01$ . Rerata kadar tembaga pada kelompok pertumbuhan janin terhambat adalah  $0,5142 \pm 0,15$   $\mu\text{g/dL}$  dan neonatus normal adalah  $0,6892 \pm 0,17$   $\mu\text{g/dL}$  dengan  $p < 0,01$

Kesimpulan penelitian ini adalah kadar zink dan tembaga pada neonatus normal lebih tinggi secara bermakna dari kadar zink dan tembaga neonatus pertumbuhan janin terhambat.

**Kata Kunci** : Zink, Tembaga, Pertumbuhan Janin Terhambat, Neonatus dan Darah Tali Pusat

**POSTGRADUATE PROGRAM ANDALAS UNIVESITY  
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THESIS, 17 JULY 2018  
MELDA AMALIA**

**Differences of Zinc and Copper Levels In Placenta Blood Normal Neonates and Intrauterine Growth Restriction.**

**121 Pages + 10 Table + 11 Appendices**

**ABSTRACT**

Zinc and copper are the micronutrients which play a role in the growth and development of fetal and infant. Its deficiency in pregnant women shall give a birth the inhibited fetal growth babies. This research is proposed to distinguish zinc and copper levels in normal neonates and those inhibited fetal growth.

The research was conducted with a comparative cross sectional analysis, experienced by three hospitals those are TK III Reksodiwirjo Hospital, Dr. Rasidin Hospital, and Bayangkara Hospital in the city of Padang. It also conducted in the SMAK Padang Chemistry Laboratory in November 2016 - January 2018. The research sample was taken from newborn blood centers for 60 respondents by consecutive sampling. Zinc and copper levels were examined by Atomic Absorption Spectrophotometry (AAS). Hypothesis testing was done by unpaired t testing.

The results showed the average zinc level in inhibited fetal growth group was  $89.34 \pm 31.53 \mu\text{g} / \text{dL}$  and normal neonates were  $122.703 \pm 39.3 \mu\text{g} / \text{dL}$  with  $p = 0.01$ . The mean copper content in the inhibited fetal growth group was  $0.5142 \pm 0.15 \mu\text{g} / \text{dL}$  and the normal neonate was  $0.6892 \pm 0.17 \mu\text{g} / \text{dL}$  with  $p < 0.01$

The conclusion of this research is zinc and copper levels in normal neonates were significantly higher than neonatal zinc and copper levels inhibited fetal growth.

**Keywords:** *zinc, copper, inhibited fetal growth, neonates and cord blood*