

The influence of mercury maternal hair and placental blood to neonatal outcomes

Nur Fitriani Juraij, Maisuri T Chalid, Elizabet Chaterine Jusuf, Efendi Lukas, Lenny M Lisal

Department of Obstetrics and Gynecology, Faculty of Medicine, Hasanuddin University, Makassar, Indonesia

ABSTRACT

Introduction: Mercury contamination can cross cellular membranes and bioaccumulate in various tissues, including the placenta during pregnancy. This study evaluates the correlation between maternal hair and placental blood mercury levels and their impact on neonatal outcomes. **Objectives:** This study evaluates the correlation between maternal hair and placental blood mercury levels and their impact on neonatal outcomes. **Materials and Methods:** This cross-sectional study involved 98 pregnant women. Mercury levels in hair and placental blood were measured using atomic absorption Spectrophotometry. Statistical analyses, including Chi-Square and Pearson correlation tests, were performed using SPSS. **Results:** Maternal hair mercury levels were positively correlated with placental blood mercury levels ($\rho=0.26$, $p=0.01$), indicating maternal-to-fetal transfer. Placental blood mercury levels were negatively correlated with placental weight ($\rho=-0.24$, $p=0.02$) and head circumference ($\rho=-0.29$, $p=0.01$). No significant associations were found between maternal hair mercury levels and neonatal outcomes. **Conclusion:** Maternal hair mercury levels correlate with placental mercury levels, indicating transfer from mother to fetus. Placental blood mercury negatively impacts placental weight and head circumference, emphasising its significance as an indicator of neonatal outcomes. Awareness campaigns about mercury exposure could help mitigate these risks.