

Mercury concentration and fish consumption in Taiwanese pregnant women

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Abstract

OBJECTIVE: The aim of this study was to assess the relationship between fish consumption and total mercury concentration in maternal blood, umbilical cord blood, and placenta tissue of pregnant women in Taiwan. **DESIGN:** Cross-sectional study. **SETTING:** A medical centre in Taipei, Taiwan. **SAMPLE:** Sixty-five pregnant women delivered between July 2004 and March 2005. **METHODS:** We administered a questionnaire to each woman in the third trimester and collected blood samples and placenta tissue after delivery. Mercury concentrations in the maternal blood, cord blood and placenta tissue were measured using mercury analyser (Hiranuma HG-310, Hitachi, Japan). A dietitian calculated the quantity of fish consumed from the questionnaire. **MAIN OUTCOME MEASURES:** The total mercury concentration in maternal blood, cord blood and placenta tissue. **RESULTS:** The mean total mercury concentration in maternal blood, cord blood and placenta tissue was 9.1 +/- 0.40 microgram/l, 10.0 +/- 0.55 microgram/l and 19.2 +/- 1.8 ng/g, respectively. Eighty-nine percent of the maternal blood mercury concentrations exceeded the US National Research Council recommended value of 5.8 microgram/l. Fish consumption while pregnant correlated significantly with maternal blood and cord blood mercury concentrations. **CONCLUSIONS:** Total mercury concentrations of maternal blood, cord blood and placenta tissue commonly exceeded recommended values, and were higher in women who ate fish more than three times a week while pregnant.