

S01-04 Prenatal low levels mercury exposure on infant development: a prospective study in Zhoushan Islands, China

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Objective. To explore the relationship between prenatal mercury exposure and infant neuro-developmental outcomes in Zhoushan cohort. **Material and methods.** 408 mother-infant pairs were enrolled in the cohort of Zhoushan Islands. Prenatal mercury exposure was determined by measuring cord blood mercury (CBHg, Range 1.34-18.34 μ g/L). Based on their CBHg, children were divided into two groups: 80 in low mercury group (LG, CBHg \leq 8.09 μ g/L). Children were followed up at 3 (n=149) and 12 (n=123) months mos. of age with evaluated BSID, hair mercury and questionnaire. The association between CBHg concentrations and neurodevelopmental outcomes at 3 and 12 months of age was examined by multiple regression analysis with adjustment for confounding variables. **Results.** The average hair mercury levels were 1058.71 \pm 69.58(LG), 1903.06 \pm 139.37 μ g/kg(HG) of 3-month-infant and 906.05 \pm 110.26(LG), 1512.41 \pm 93.85 μ g/kg(HG) of 12-month-infant. The hair mercury of 12-month were lower than that of 3-month significantly in both group. MDI of 3-month-infant were 109.01 \pm 4.16 of LG, 108.32 \pm 4.23 of HG, PDI were 99.91 \pm 3.28 of LG, and 98.71 \pm 5.21 of HG. MDI of 12-month-infant were 110.60 \pm 4.29 of LG, 109.56 \pm 4.29 of HG; PDI were 104.06 \pm 3.75, and 101.70 \pm 3.59 of HG. There were no significant differences of MDI and PDI between the two groups in both ages. At 3 months, high risk factors for MDI were hair mercury of 3 months and head circumference; and those for PDI were hair mercury of 3 months and gender. At 12 months, the high risk factors for MDI scores were hemoglobin of 3 months, age when children stood up and those for PDI were age when children stood up, average times of fish dinners of mother and hemoglobin of 12 months. **Conclusions.** The hair mercury level was significantly related with CBHg. The mercury exposure level of 12-month-infant was lower than that of 3-month-infant. **Prenatal low level mercury exposure had no significantly impacts on infants' development in Zhoushan cohort.**

Keywords: Mercury; Development; Toxicity; Prenatal exposure; Infant