

Distribution of Mercury in Serum and Blood Cells and Risk of Spontaneous Preterm Birth: A Nested Case–Control Study in China

The relationship between maternal mercury (Hg) intake and the risk of spontaneous preterm birth (SPB) remains unclear. We conducted a nested case–control study from a prospective cohort in Shanxi Province, China, to explore their associations. In total, 126 pregnant women with SPB (cases) and 348 controls with term delivery were included. We measured the Hg concentrations in their serum (Hgs) and blood cell (Hgc) fractions and calculated the concentration ratio of Hg in serum to Hg in blood cells (Hgs/c). We found that only the Hgs/c in the case group was slightly higher than that in control group. The OR of Hgs/c associated with SPB risk was 1.57 [95%CI: 0.99–2.46] with adjusting confounders. After stratification by sampling time, the association above was only statistically significant in the first trimester. High Hgs/c may increase the risk of SPB in the first trimester among women with relatively low Hg exposure.

Summary

Highlights:

Association between maternal low Hg exposure with SPB risk is under discussion.

Concentration ratio of Hg in serum to blood cells (Hgs/c) were determined.

We found higher Hgs/c was positively associated with an elevated risk of SPB.

Hgs/c may be a sensitive indicator of reproductive toxicity induced by Hg exposure.

This study investigated the association between maternal Hg exposure and SPB risk using a nested case–control study in Shanxi Province, China. We concluded that Hgs/c was positively associated with SPB risk in the first trimester and that it may be a more sensitive indicator of reproductive toxicity.

Primary author: Dr AN, Hang (Peking University)

Co-author: Dr WANG, Bin (Peking University)

Presenter: Dr AN, Hang (Peking University)