EFFECTS OF MOTHER'S CONSUMPTION OF TRADITIONAL CHINESE HERBS AND LEAD AND CADMIUM CONCENTRATION IN MECONIUM IN TAIWAN

Chuen-Bin Jiang, *Department of Pediatrics, Taipei Mackay Memorial Hospital, Taipei, Taiwan*
Ching-Ying Yeh, *Department of Public Health, School of Medicine, Taipei Medical University, Taipei, Taiwan*
Bor-Cheng Han, *School of Public Health, Taipei Medical University, Taipei, Taiwan*
Ruey-Yu Chen, *School of Public Health, Taipei Medical University, Taipei, Taiwan*
Shu-Yu Lyu, *School of Public Health, Taipei Medical University, Taipei, Taiwan*
Chun-Hua Fan, *School of Public Health, Taipei Medical University, Taipei, Taiwan*
Ling-Chu Chien*, *School of Public Health, Taipei Medical University, Taipei, Taiwan*

Background and Aims: Traditional Chinese herbs have been used in Chinese society for thousands of years, and consequently family members would like to use herbal remedies to keep pregnant women in good health. Meconium is a matrix and is representative of a wide period of exposure in the fetus during gestation. The purposes of this study were to assess the relationship between mercury, lead, and cadmium concentration in meconium and the consumption of traditional Chinese herbs commonly used before and during pregnancy.
Methods: A total of 275 mother-infant pairs residing in Northern Taiwan were recruited for the study between January 2007 and March 2009. The parents were interviewed face-to-face by a trained interviewer after delivery in which information pertaining to the parents' and baby's demographic characteristics at birth were collected. Lead and cadmium concentrations in meconium were analyzed by ICP-MS.
Results: The geometric mean of lead and cadmium concentrations in all meconium samples (n = 275) was 117.2 ± 48.4 and 28.5 ± 4.0 ppb, respectively. The concentration of lead in the meconium of the consumption group (the mothers who consumed traditional Chinese herbs) was 491.9 ± 462.4 ppb, a level significantly higher than the level of 93.9 ± 52.1 ppb found in the control group (mothers who did not consume traditional Chinese herbs) before pregnancy. There was the same result during the pregnancy (923.4 ± 87.69 ppb vs.106.1 ± 49.5 ppb). The cadmium concentration in meconium was no significantly different between the two groups.
Conclusions: According to our findings, if the mother had consumed traditional Chinese herbs before or during pregnancy, it may be affect the body burden of lead in their fetus. The quality of raw material for traditional Chinese herbs may be affected by environmental contaminants and cultivated materials, so there should be frequent monitoring of purity.