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Prenatal Triclosan exposure on birth outcomes from the mother and kids environmental health study

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Statement of the Problem: Triclosan (TCS) is an antibacterial agent found in consumer products especially toothpaste, antiseptic soaps and detergents and has a possible role in disrupted hormonal development. There is insufficient research on TCS exposure during the prenatal period or variance according to environmental factors. Therefore, this study examined the relationship between prenatal TCS exposure and birth outcome considering environmental factors.

Methods: The MAKE study plans to recruit more than 300 pregnant, Korean women during 2nd and 3rd stage pregnancy between 2017 and 2019. We collected urinary TCS concentrations during the third trimester, as well as information on birth outcome (fetal weight, height, head circumferences and abdominal circumferences), socio-economic status, use of disposable foods, and habits of consumption of consumer products. Multiple regression analysis was performed to assess the effect of TCS exposure on birth outcome.

Results: We found that the creatinine-adjusted geometric mean of TCS were 0.8 μ g (95% CI: 0.58-3.84) and tended to increase depending on environmental factors (using antimicrobial soap, body cleanser, shampoo and disposable products consumption). There was a significant correlation between urinary concentrations of TCS and birth weight (180.49g, 95% CI: 64.22-296.76) and birth abdominal circumferences (1.21cm, 95% CI: 0.46-1.96) in the case of disposable products use.

Conclusions: We found that the association between urinary concentration of TCS and birth outcomes, differed by environmental factors such as the case of consumer products consumption (using antimicrobial soap, intake of disposable products). Further study is required to more fully elaborate this relationship among environmental factors, prenatal TCS exposure and birth outcome.

Recent Publications:

1. Byungmi Kim. et al (2017). Path analysis of prenatal mercury levels and birth weights in Korean and Taiwanese birth cohorts: *Science of the Total Environment*. 15:605~606 (4.9)
2. Kwon EJ et al (2016). Prenatal exposure to perfluorinated compounds affects thyroid hormone levels in newborn girls: *Environment International*. 94:607~613 (5.929)
3. Shah-Kulkarni Surabhi et al (2016). Prenatal Exposure to Perfluorinated Compounds Affects Birth Weight Through GSTM1 Polymorphism: *Journal of Occupational and Environmental Medicine*. 58(6):e198~205 (1.627)
4. Shah-Kulkarni Surabhi et al (2016). Neurodevelopment in Early Childhood Affected by Prenatal Lead Exposure and Iron Intake: *Medicine*. 95(4):1~9 (2.133)
5. Eunyong park et al (2015). (Factors Related to Relapse after 6 Months of Smoking Cessation among Men in the Republic of Korea: a cross-sectional study: *Medicine*. 94(29).

Biography

Byung-Mi Kim is the research associate at the Ewha Womans University in Seoul, Korea. Currently responsible for activities on Mothers and Children's Environment and Health (MOCEH): A multi-center longitudinal study in Korea. She trained as a specialist of Preventive Medicine at the School of Medicine, Ewha Womans University where her work with mothers and children's Health and environment started. The publications of Kim are mainly in the areas of: The relationship between mercury level during pregnancy and infant weight during the 24 months of life in MOCEH. She has worked as postdoctoral research fellow in the Environmental and Occupational & Epidemiology Program in the Department of Environmental Health at the Harvard School of Public Health.

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