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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 (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.