More studies needed on use of acetaminophen prior to pregnancy, researchers say

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Jasleen Arneja, a researcher at U of T's Dalla Lana School of Health, says that her study should be taken into account by clinicians even if it does not conclusively prove a causal relationship between acetaminophen use prior to pregnancy and babies born small for their gestational age or with low birth weight. Credit: Françoise Makanda

Using the popular painkiller acetaminophen just before pregnancy could lead to babies born smaller than usual for their gestational age or with a lower birth weight, a new study by University of Toronto researchers suggests.

The researchers' findings, published recently in the journal *Pediatric Research*, could potentially have implications for women who are trying to get pregnant.

"Nobody has examined acetaminophen use in the three months prior to pregnancy before," says Jasleen Arneja, the study's lead author and a researcher at the Dalla Lana School of Public Health.

"We found that the more frequently a woman was taking acetaminophen in the three months prior to pregnancy, the greater her risk was of having a baby born small for gestational age or with low birth weight."

Acetaminophen, the active ingredient in well-known brands like Tylenol, is the only physician-recommended pain medication available to pregnant women to help address inflammation, pain and fever. But some recent studies have found an association between acetaminophen-use during pregnancy and neurological disorders including cerebral palsy, ADHD and other behavioral problems.

Arneja says that systematic reviews have so far found these relationships inconclusive, and that her recent study's results requires additional research as well.

"We cannot say conclusively that there's a causal relationship," she says. "It's important not to overstate the study's results because we don't want to burden pregnant women or those planning for pregnancy.

"However, we do think that clinicians who are taking care of women

who are planning to get pregnant should take the study into consideration."

The authors, who included Assistant Professor Jennifer Brooks and Associate Professor Rayjean Hung, used data from 1,200 women participating in the Ontario Birth Study at Mount Sinai Hospital. They examined three outcomes: preterm birth, low birth weight and small-for-gestational-age. Current medical literature suggests that these birth outcomes are linked to an increased risk of various neurodevelopmental disorders in early childhood.

Women who took acetaminophen more than once a week in the three months before pregnancy had an 82 percent higher risk of having a baby born small for gestational age and approximately two-fold risk of the baby having low birth weight, compared to women who never took the drug. Moreover, even women who took acetaminophen less than once a week in the three months before pregnancy had a 46 percent higher risk of having a baby born small for gestational age, compared to women who never took it.

About 60 percent of the cohort reported using acetaminophen at any point during the study period, according to Arneja.

Research to assess childhood developmental health outcomes in the Ontario Birth Study is still ongoing.

More information: Jasleen Arneja et al. Association between maternal acetaminophen use and adverse birth outcomes in a pregnancy and birth cohort, *Pediatric Research* (2019). DOI: 10.1038/s41390-019-0726-8

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