Antacid medication in pregnancy may increase childhood asthma

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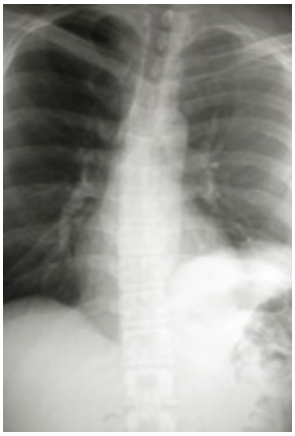

(PhysOrg.com) -- Children of mothers who took acid-suppressive drugs during pregnancy had a 1.5 times higher incidence of asthma when compared with children who were not exposed to the drugs in utero, finds a large population-based study by researchers at Children's Hospital Boston.

The findings, accompanied by an editorial, appear online in "Early View" in the journal *Clinical & Experimental Allergy*. They will be formally published online on Jan. 19 and will appear in the journal's February print edition.

Lead researchers Elizabeth Hait and Edda Fiebiger, and first author

Eleonora Dehlink of the Division of Gastroenterology/Nutrition at Children's examined mother-child allergy relationships using national health registers in Sweden, which contain records of all hospitalizations and drug prescriptions. By linking data from the Swedish Medical Birth Register with the Hospital Discharge Register and the Prescribed Drug Register, the team was able to identify mothers who took acid-blocking medicines during pregnancy. "We also used the registries to identify children who were hospitalized for allergic disorders or received a prescription for allergies, and then traced them back to their mothers," says Hait.

The team analyzed data from more than 585,000 children born between 1995 and 2004. Overall, about 5,600 children (just under 1 percent) had been exposed to acid-suppression therapy during their mother's pregnancy, and more than 29,000 (5 percent) had a discharge diagnosis of allergy or prescriptions for allergy medications by 2006. Maternal use of acid-suppressive medicines was associated with a 43 percent greater likelihood that a child would be hospitalized or receive prescriptions for allergic conditions. Asthma was the most commonly reported condition; maternal use of acid-suppressive medications increased its likelihood by 51 percent.

The team then repeated their analyses to factor in maternal history of allergy, a known strong risk factor for allergy in children. "We found that if a mother is allergic, antacids don't seem to increase the risk of allergies significantly, because the risk of her child having allergies is already very high," says Fiebiger. "But if a mother is non-allergic, it does increase the risk." The increase in childhood allergic disease associated with acid-suppressive drugs was 43 percent when the mother was nonallergic, versus 25 percent for children of allergic mothers (the latter was not statistically different from chance).

Acid-suppressing medication is commonly used for acid reflux, or

heartburn. Reflux occurs in up to 85 percent of pregnancies, as high levels of estrogen are thought to weaken the lower esophageal sphincter, allowing stomach acid to splash up.

There have already been studies showing that acid-suppressing drugs result in allergic sensitization in adults. “One function of stomach acid is to break down food proteins,” explains Hait. “If the protein isn’t being broken down completely, the immune system can potentially recognize the proteins as allergens.” And mouse studies have shown that the offspring of pregnant mice exposed to acid-blocking medications during pregnancy have higher levels of the immune cells that are predominant in allergic conditions.

“Our study is the first to look at mother-child transfer of allergies in humans,” says Fiebiger, whose laboratory researches the immune mechanisms of food allergy.

Hait says that there are many nondrug ways a patient can help relieve acid reflux, such as eating smaller meals and avoiding caffeine, spicy foods, and peppermint, which all promote acid reflux.

However, the researchers aren’t suggesting that all pregnant women stop taking acid-suppressive medication.
“Some pregnant women have such severe acid reflux they can’t eat because they are in so much pain,” says Hait. “That is obviously not good for the baby either. So each pregnant woman suffering from acid reflux, with the guidance of her physician, should weigh the potential risks and benefits of taking acid-suppressive medication,” says Hait. “If it is deemed necessary, they should certainly proceed with taking the medication, but dietary and lifestyle modifications should be attempted first.”

An accompanying editorial, by Andrew S. Kemp of the department of

allergy and immunology at the Children's Hospital at Westmead (Sydney, Australia), reviews proposed explanations for a relationship between gastric acid suppression and childhood allergic disease. He concludes that acid suppression isn't ready to be added to the list of potential influences on the development of allergic disease in children. "However," he writes, "it is an issue that requires further research in view of the widespread use in infancy of drugs that suppress gastric acidity and the continuing increase in food allergy in early childhood."

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