

No causal link between antibiotics and childhood asthma

Several previous studies have shown that if the mother is given antibiotics during pregnancy or if a small child is given antibiotics in early life, the child has an increased risk of developing asthma. However, a new register study at Karolinska Institutet, published in the scientific journal *BMJ*, dismisses previous claims that there is a casual link between the increased use of antibiotics in society and a coinciding rise in childhood asthma.

Diagnosing asthma in small children may be difficult since newly presented symptoms of asthma can be misinterpreted as a respiratory infection. The children may then have received antibiotics for the supposed infection – which actually is asthma – and the antibiotic treatment is then suspected to have caused the asthma that is later discovered. Another explanation for previous positive associations is that respiratory infections themselves increase the risk of asthma, regardless of whether or not they are treated with antibiotics. A third explanation is that previous studies have not given sufficient consideration to other factors shared within families that may increase the risk of asthma, such as genetics, home environment and lifestyle.

The study included almost half a million Swedish children to born women pregnant between July 2005 and 2010, identified from population-based demographic and health registers, such as the Medical Birth Register, the Multi-generation register, the National Patient Register, and the Prescribed Drug registers.

By taking advantage of the Swedish registers, we were able to conduct sibling control analyses to further assess causality and show that previous positive associations are likely due to confounding by familial factors in addition to confounding by respiratory infections. In brief, there were a large number of children in the study where one sibling had asthma and where another had been exposed to antibiotics without developing asthma. The number of such families was large enough to dismiss a causal link between antibiotics and asthma in the child.

Bearing in mind the threat of antibiotic resistance, it is of great importance to acknowledge that though antibiotics may not cause asthma, careful consideration is required as to whether respiratory symptoms should be treated with them.

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