

Correspondence

Cesarean delivery, antibiotic exposure, and probiotics: relationship with childhood asthma

To the Editor:

I read with great interest the article by Ly et al.¹ The authors have described that the risk for atopy, asthma, and allergic rhinitis has been associated with cesarean section (CS) delivery, perhaps because of a lack of exposure to the maternal vaginal flora, gut flora, or both during normal delivery. However, this issue is still unresolved, as study results have been contradictory (some studies showing increased risk/association, while others not). But in the largest birth cohort study including 1,756,700 singletons, Tollånes et al² found that while children born by CS had a 52% increased risk for asthma, those born by instrumental vaginal delivery had a 19% increased risk than did those born by spontaneous vaginal delivery. Although CS was associated with a moderately increased risk of asthma, the association was apparently stronger for emergency CS (59%) than for planned CS (42%). This later result has not been found in other studies (as they have not tried to show the same). If this is true, then what is the cause of this discrepancy? Does routine use of antibiotics during CS (common in emergency CS),³ besides lack of exposure to the maternal vaginal and/or gut flora, explain this discrepancy? The answer might be yes, as supported by other studies,^{4,5} in which the authors have found that antibiotics prescription during pregnancy or at the time of normal (not CS) delivery increases the risk for allergic disease including different phenotypes of wheezing. This is also supported by the fact that the prevalence of asthma in children has increased during recent years in parallel with the increase in CS delivery (emergency being more common than elective one) and associated antibiotics use worldwide. As no studies have specifically looked for the role of intrapartum antibiotic prophylaxis in the development of asthma in children delivered by CS, this needs urgent investigation to solve the above issue.

The authors also described that there are no current data to support the use of probiotics in the treatment or prevention of asthma. This is partially true if we consider the following points: First, there are a few published studies that have examined the role

of probiotics in subjects with asthma. Second, clinical trials have shown that children having concomitant asthma and allergic rhinitis have benefited from probiotics use,^{6,7} which highlights the concept of “united airways disease” (increasing evidence for a close link between the upper and the lower airways and rhinitis having an important impact on asthma). Third, studies using probiotics have been confounded by the beneficial effect of any particular strain of bacteria, subgroup of population showing benefit, effectiveness of larger dose of probiotic if smaller dose is not effective, duration of use, and so forth. We hope that future trials will try to address these issues.

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