Rotavirus vaccine, breastfeeding, and other factors that could affect susceptibility to gastroenteritis in young children

Dear Editor:

Re: Gosselin V, Petit G, Gagneur A, Gnreux M. Trends in severe gastroenteritis among young children according to socio-economic characteristics before and after implementation of a rotavirus vaccination program in Quebec. *Can J Public Health* 2016;107(2): 161–67. doi: 10.17269/cjph.107.5286

In recent years, several provinces across Canada have implemented public rotavirus vaccination programs. Rotavirus (RV) is a common virus that causes gastroenteritis; 36% of Canadian children who contract the virus visit a physician, 15% visit an emergency room, and 7% require hospitalization.¹ Since the implementation of vaccine programs, there has been a significant decrease in the number of cases of RV.^{2,3} This is certainly encouraging and therefore the need for further research into other variables that could affect the efficacy of the vaccine and its administration warrant exploration. The research conducted in the study by Gosselin et al.⁴ examined how socio-economic status could affect the efficacy of a vaccine program implemented in the Eastern Townships of Quebec. The results could be vital to discovering how the vaccine is administered and could give further clues as to what other factors could help to decrease the incidence of RV gastroenteritis in certain subgroups.

The population cohort that was followed in this study was derived from a small group of townships in Quebec. Although this area is composed of urban, semi-urban, and rural areas, it is still limited geographically, and therefore it is difficult to determine if the cohort was generalizable to the overall population. Also of note, there were no exclusion criteria in the study. The authors included all children born at the Centre Hospitalier Universitaire de Sherbrooke (CHUS) between June 1999 and May 2014. They did not address or exclude those children who had complications at birth, were immunocompromised, or had hospitalizations prior to the diagnosis of RV gastroenteritis. Any of these factors could potentially make the children more susceptible to gastroenteritis and have been addressed in previous studies on the same topic.¹

As the authors of the study were concerned with the differences between certain subgroups, with a main focus on differences in socio-economic status, there is one central confounding variable that was never addressed; It has been noted that breastfeeding may help decrease the incidence of gastroenteritis in children aged 0–12 months or at least delay contraction of the virus until later in life.⁵

In fact, in one recent study it was found that breastfeeding was linked to reduced rotavirus shedding and IgA levels after immunization with Rotarix^{}.⁶ As well, it has been long known that breastfeeding rates are affected by socio-economic status, and those in lower income brackets are less likely to breastfeed,⁷ therefore there is the possibility that breastfeeding rates could have affected the study findings.

Although there are conflicting views on the link between breastfeeding and the rotavirus vaccine,^{5,6,8} it is possible that such a link exists, and as breastfeeding is strongly associated with socio-economic status, it would have been interesting to see the findings of the study if breastfeeding had been considered a variable.

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