

# Letter to the editor regarding “Rotavirus infection beyond the gut”

This article was published in the following Dove Press journal:  
*Infection and Drug Resistance*

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## Dear editor

Gomez-Rial et al, in their review paper “Rotavirus infection beyond the gut”,<sup>1</sup> concluded that there is some degree of protection of the RV vaccination against seizure hospitalizations. A detailed analysis of the potential biases of the literature could lead to a less optimistic position for the vaccine. For example, the protection found in the USA and Australia could be partly due to the uncontrolled influenza vaccine (where the coverage in children under 5 years in EEUU reached 66–75%<sup>2</sup>). Other studies have small sample sizes, or used poorly adjusted analyses.

Beyond their different degrees of appraisal of the papers depending on the direction of the results, there is a lack of discussion of the publication bias, as this bias disrupts the literature promoting positive findings and hiding negative results.

It is important to mention some misinterpretations in their review of our previous study:<sup>3</sup>

1. Unlike stated in Gomez-Rial’s, our results did not include cases of primary care. Only convulsion-related hospitalizations (ICD-9 780.3x) were included.
2. Gomez-Rial’s criticized that we used absolute figures instead of rates. Indeed, observed counts were modeled, but using the corresponding population as covariate. This is equivalent to modeling the rate for each observation and this is the most typical procedure for modeling rates in many fields, such as disease mapping.<sup>4</sup> In this manner, the different uncertainty of each rate is taken into account.
3. Gomez-Rial pointed out that our multivariate model could have been over-controlled and variables time and coverage could be redundant. However, the withdrawal of the rotavirus vaccines from the Spanish market in 2010<sup>5</sup> made their inclusion necessary. The impact we found was far from the protection described in the literature review.<sup>1</sup> If we ignore confounding effects, we will probably attribute to the vaccine some effects due to other uncontrolled variables. This is especially remarkable when the vaccine is not recommended in the national vaccination schedule (ie, Spain), and therefore, those vaccinated clearly differ from the unvaccinated.

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Unadjusted results of our article showed that the use of RV vaccines was significantly correlated with a reduction of seizure-related hospitalizations, but also of all-cause hospitalizations.<sup>3</sup> These effects disappeared after controlling by confounders such as

clinical variations in medical practice among health departments, seasonality, gender, age and population.

Therefore, there is still much to be studied before we can support the effectiveness of RV vaccines to prevent seizures in children.

## Disclosure

The authors report no conflicts of interest in this communication.

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