

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

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

Alejandro Orrico-Sánchez¹
Mónica López-Lacort¹
Cintia Muñoz-Quiles¹
Miguel Angel Martinez-Beneito²
Javier Díez-Domingo¹

¹Vaccine Research, Fundación para el Fomento de la Investigación Sanitaria y Biomédica de la Comunitat Valenciana, FISABIO-Public Health, Valencia, Spain;

²Health Inequalities, Fundación para el Fomento de la Investigación Sanitaria y Biomédica de la Comunitat Valenciana, FISABIO-Public Health, Valencia, Spain

Dear editor

Gomez-Rial et al, in their review paper “Rotavirus infection beyond the gut”,¹ 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%²). 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:³

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.⁴ 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 2010⁵ made their inclusion necessary. The impact we found was far from the protection described in the literature review.¹ 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.

Correspondence: Alejandro Orrico-Sánchez
FISABIO, Avda. Catalunya 21, Valencia 46020, Spain
Tel +3 496 192 5950
Email orrico_ale@gva.es

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.³ 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.

References

1. Gomez-Rial J, Sanchez-Batan S, Rivero-Calle I, et al. Rotavirus infection beyond the gut. *Infect Drug Resist*. 2019;12:55–64. doi:10.2147/IDR.S186404
2. CDC. *Flu Vaccination Coverage, United States, 2015–16 Influenza Season*. 2017. Available from: <https://www.cdc.gov/flu/fluview/coverage-1516estimates.htm>. Accessed December 16, 2018.
3. Orrico-Sanchez A, Lopez-Lacort M, Munoz-Quiles C, Diez-Domingo J. Lack of impact of rotavirus vaccines on seizure-related hospitalizations in children under 5 years old in Spain. *Hum Vaccin Immunother*. 2018;14(6):1534–1538.
4. Botella-Rocamora P, Lopez-Quilez A, Martinez-Beneito MA. Spatial moving average risk smoothing. *Stat Med*. 2013;32(15):2595–2612. doi:10.1002/sim.5704
5. Bouzon Alejandro M, Diez Domingo J, Martinon Torres F. Circovirus and impact of temporary withdrawal of rotavirus vaccines in Spain. *Hum Vaccines*. 2011;7(7):798–799. doi:10.4161/hv.7.7.15683

Dove Medical Press encourages responsible, free and frank academic debate. The content of the Infection and Drug Resistance 'letters to the editor' section does not necessarily represent the views of Dove Medical Press, its officers, agents, employees, related entities or the Infection and Drug Resistance editors. While all reasonable steps have been taken to confirm the content of each letter, Dove Medical Press accepts no liability in respect of the content of any letter, nor is it responsible for the content and accuracy of any letter to the editor.

Infection and Drug Resistance

Dovepress

Publish your work in this journal

Infection and Drug Resistance is an international, peer-reviewed open-access journal that focuses on the optimal treatment of infection (bacterial, fungal and viral) and the development and institution of preventive strategies to minimize the development and spread of resistance. The journal is specifically concerned with the epidemiology of

antibiotic resistance and the mechanisms of resistance development and diffusion in both hospitals and the community. The manuscript management system is completely online and includes a very quick and fair peer-review system, which is all easy to use. Visit <http://www.dovepress.com/testimonials.php> to read real quotes from published authors.

Submit your manuscript here: <https://www.dovepress.com/infection-and-drug-resistance-journal>