AUCTORES
Globalize your Research

Biomedical Research and Clinical Reviews

Mostafa Norizadeh *

Open Access

Short Communication

The Importance of Rotavirus Vaccination in Children

Ghazal Zarei [1], Mostafa Norizadeh [2,3*]

[1] Department of Legal Medicine, Toxicology and Forensic Medicine, Jordan University of Science & Technology, Jordan.

[2] International Mariinskaya Academy, department of medicine and critical care, department of philosophy, Academician secretary of department of Sociology.

[3] Cypress International Institute University, Texas, USA.

***Corresponding Author:** Mostafa Norizadeh, Department of Public Health, University of Namibia, Oshakati, Namibia, School of Health Sciences, Cardiff University, Wales, UK.

Received Date: May 09, 2023; Accepted Date: May 16, 2023; Published Date: May 23, 2023

Citation: Ghazal Zarei, Mostafa Norizadeh, (2023), The Importance of Rotavirus Vaccination in Children, *J. Biomedical Research and Clinical Reviews*. 8(2); **DOI:10.31579/2692-9406/152**

Summary

The major reason of severe and dehydrating gastroenteritis in children is Rotavirus, especially in children under 5 years old. The virus first infects enterocytes and induces diarrhea by the destruction of absorptive enterocytes, intestinal secretion stimulated through rotavirus non-structural protein, and activation of the enteric nervous system [1]. The symptoms of Rotavirus infection appear after a period of 1 to 3 days. It is noticeable that the symptoms of this disease are almost the same as other gastrointestinal infections. However, rotavirus infections are expected to be more severe diarrhea, fever, and vomiting are the most common presenting symptoms [2].

Currently, the most effective way to prevent this disease is to use a more effective vaccine. Rota Teq (RV5) and Rotarix (RV1) are the most used vaccines for rotavirus prevention. Rotarix is an oral monovalent vaccine consisting of a live-attenuated human rotavirus G1P genotype.

RV1 is a product of GlaxoSmithKline Biologicals, Belgium, and was launched into the market in 2006. Since then, the use of RV1 is extensively characterized by post-marketing surveillance studies in different settings to establish safety, effectiveness, and impact. The data from the developed countries have shown that RV1 prevents 82% of severe diarrhea cases attributed to Rotavirus and approximately 37% of severe all-cause childhood diarrhea. [3-6]. RotaTeq is an oral pentavalent live attenuated reassorted bovine-human rotavirus vaccine that contains one common human VP4 type and four common human VP7 (G) type rotaviruses (G1, G2, G3, and G4). RotaTeq was created by Merck and Co. Inc. in the United States and released on the market concurrently with RV1. RV5 has been demonstrated to prevent 82% of severe rotavirus-associated children's diarrhea in affluent nations with low mortality. Similar to R1, its efficacy is diminished in developing nations with notably high birth cohorts since it only stops 41% of severe rotavirus-associated children's diarrhea and 15% of severe all-cause diarrhea episodes. One justification for rotavirus vaccination is that it triggers an immune response to both the heterologous serotypes and the vaccine's serotype [4,6]. Although rotavirus infections of the gastrointestinal system still cause serious illness, new vaccinations provide hope for lowering the high morbidity seen in developing nations. Hopefully, continuing vaccine studies in developing nations may reduce child mortality from rotavirus globally. The fight against this virus must be taken more seriously, and vaccination must be utilized widely. Because this virus has an RNA genome, it has a high degree of mutability and this issue could become a severe problem.

References

1. Crawford SE, Ramani S, Tate JE, Parashar UD, Svensson L, Hagbom M, Franco MA, Greenberg HB, et all., (2017).Rotavirus infection. Nat Rev Dis Primers. Nov 9;3:17083.
2. Bernstein DI. Rotavirus overview. Pediatr Infect Dis J. (2009). Mar;28(3 Suppl):S50-53.
3. Carcamo-Calvo R, Munoz C, Buesa J, Rodriguez-Diaz J, Gozalbo-Rovira R.(2021). The Rotavirus Vaccine Landscape, an Update. Pathogens. Apr 26;10(5):520.
4. Soares-Weiser K, Bergman H, Henschke N, Pitan F, Cunliffe N, (2019). Vaccines for preventing rotavirus diarrhoea: vaccines in use. Cochrane Database Syst Rev.Mar 25;3(3):CD008521.
5. Sengupta P. (2009). Rotavirus: the challenges ahead. Indian J Community Med. Oct;34(4):279-282.
6. Burke RM, Tate JE, Kirkwood CD, Steele AD, Parashar UD. Current and new rotavirus vaccines. Curr Opin Infect Dis. 2019 Oct;32(5):435-444.

DOI: 10.31579/2692-9406/152