



**6th International Conference on Nanotechnologies and Biomedical Engineering
Proceedings of ICNBME-2023, September 20–23, 2023, Chisinau, Moldova
Volume 2: Biomedical Engineering and New Technologies for Diagnosis, Treatment, and
Rehabilitation**

Prospective, Descriptive Study of Rotaviral Infection in Vaccinated and Non-vaccinated Infants from Republic of Moldova

Ala Donos, Albina-Mihaela Iliev

https://doi.org/10.1007/978-3-031-42782-4_43

Abstract

Acute diarrheal disease is one of the most current health problems of the baby. Rotaviral infection is the most common cause of dehydration in infants and young children. The implementation of the sentinel surveillance of rotaviral infection in infants from 2008 in the Republic of Moldova demonstrated the high rate of this infection (40.0%), being an argument in recommending the antirotaviral immunization in children within the National Immunization Program. The study enrolled children with acute diarrheal disease, included in the sentinel supervision (2012–2016) and treated in the Unit of acute diarrheal dis-eases of Clinical Children’s Hospital no. 1. Were assessed 193 patients with acute diarrheal disease, according with a standard clinical approach. The biological material was examined by serological enzyme-linked immunosorbent assay (ELISA) and genotyping revealed by polymerase chain reaction (PCR). The rotaviral infection was confirmed in 193 infants, of which 121 children were not vaccinated against rotaviral infection, and 72 were immunized. Depending on the genotypes encountered before and after vaccination, it was found that G9P, G3P, G4P was detected before vaccination, but post-vaccine prevailed G2P, G4P, also the incidence of rotaviral infection is decreasing, and the evolution of the disease is much easier. This article reflects the evolution of the genotypic properties of rotaviruses and the clinical-paraclinical particularities of rotaviral infection in infants, with a major importance in the context of



**6th International Conference on Nanotechnologies and Biomedical Engineering
Proceedings of ICNBME-2023, September 20–23, 2023, Chisinau, Moldova
Volume 2: Biomedical Engineering and New Technologies for Diagnosis, Treatment, and
Rehabilitation**

the implementation of antirotaviral immunization in children within the National Immunization Program in the Republic of Moldova.

Keywords: diarrhea, rotavirus, childhood diseases, infants, antirotaviral vaccine

References

1. Gheorghita, S., et al.: Impact of rotavirus vaccine introduction and vaccine effectiveness in the Republic of Moldova. *Clin. Infect. Dis.* **62**(suppl. 2), 140–146 (2016)
2. Denisyuk, N.: Genetic Characteristics of rotaviruses of group A circulating in the Orenburg Region during the 2016–2017 season. *Infections in Infants* **16**(4) (2017)
3. WHO. Diarrhea (Newsletter) (April 2017). <https://www.who.int>
4. Uciaikin, V., Novokshonov, A.: Antiinflammatory Therapy in Complex Therapies for the Treatment of Viral Infections and Viral-bacterial Infections. *Infections in Infants, Special Issue* (2012)
5. Grimwood, K., Lambert, S., Milne, R.: Rotavirus infections and vaccines: burden of illness and potential impact of vaccination. *Rotavirus Infect. Vaccines* **12**(4), 235–256 (2010)
6. WHO. Early child development (2013). <https://www.ncbi.nlm.nih.gov/books/NBK310550/>
7. WHO Vaccine-Preventable Diseases Surveillance Standards, September 5 (2018).
<https://health.hawaii.gov>
8. Remel Diagnostic Tests, Thermo Scientific Oxoid Microbiology Products (2019).
<http://www.oxid.com>
9. Dozornii epidnadzor za rotavirusnoi infectsiei v Respublike Moldova Natsionalinii Tsentr Obshestve- novo Zdorovia 6-oe soveshceanie Evropeiskovo regionalinovo biuro VOZ podozornomu epidnadzoru za rotavirusnoi infectsiei (iuni 2008 - avgust 2015). <http://repozitory.usmf.md>
10. Bîrca, L., Spînu, C., Rusu, G., et al.: Rotavirus infection - clinical-epidemiological features and prophylaxis options. *Scientific Annals of USMF, Nicolae Testemitanu* **3**(9), 324–328(2008)
11. Desselberger, U.: differences of rotavirus vaccine effectiveness by country: likely causes and contributing factors. *Pathogens* **6**(4), 65 (2017)
12. Velazquez, R., Linhares, A., Munoz, S., Seron, P., Lorca, P.: Efficacy, safety and effectiveness of licensed rotavirus vaccines: a systematic review and meta-analysis for Latin America and the Caribbean. *BMC Pediatr.* **17**, 14 (2017)



**6th International Conference on Nanotechnologies and Biomedical Engineering
Proceedings of ICNBME-2023, September 20–23, 2023, Chisinau, Moldova
Volume 2: Biomedical Engineering and New Technologies for Diagnosis, Treatment, and
Rehabilitation**

13. Bîrlut,iu, V., Bîrlut,iu, R.: Underevaluated rotavirus infection in Romania: prospective clinical and epidemiological study, therapeutic and economic implications. *ActaMedicaTransilvanica* **19**(1), 154–156 (2014)

14. Soares-Weiser, K., Maclehose, H., Bergman, H., et al.: Vaccines for preventing rotavirus diarrhoea: vaccines in use. *Cochrane Database SystRev* **11** (2012)