

SHORT COMMUNICATION

IMMINENT CONTESTS AND SCENARIOS OF ROTAVIRUS
VACCINATION IN PAKISTAN

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ABSTRACT

Background: Rotavirus is one of the significant causes of gastroenteritis in children under the age of five years. Thousands of fatalities have occurred in low socioeconomic, underdeveloped countries. It is also an essential contributor to child death in Pakistan and a critical economic burden due to hospitalization. **Objectives:** The Extended Program on Immunization (EPI) in Pakistan planned to include a vaccine for rotavirus in a routine immunization program for children in two doses from October 2016. **Methodology:** The literature was searched using databases, including Google Scholar, Scopus, and PubMed. **Results:** Reports on vaccination coverage have revealed a number of problems associated with inadequate vaccination coverage, such as medical malpractice, neglect, illiteracy, community issues, and denials from parents on account of their child's illness, among other things. It is also impossible to keep the appropriate vaccination program going due to a lack of personnel needed for the precise delivery of the rotavirus vaccine. **Conclusion:** Including this vaccine will save the lives of approximately 29,000 children every year. However, the proper administration of the rotavirus vaccine to all children who are eligible for vaccination will be a real challenge to the government and health agencies in Pakistan.

Keywords: Rotavirus, Pakistan, Diarrhea, Vaccine, Extended Program on Immunization

INTRODUCTION

According to WHO, diarrhea has the 3rd highest mortality rate among infectious diseases. Due to limited access to health resources, gastroenteritis has become a fatal disease in infants in Pakistan. Pakistan has significant challenges in acquiring improved child health (1). The sum of fatalities caused by diarrhea had declined significantly from 1.8 million in 2003 to 0.7 million in 2011 around the globe in children under five years of age (2). The second leading cause of mortality is diarrhea in children under five years of age, and it accounts for 1,340,000 mortalities every year. In June 2009, WHO recommended that all countries include rotavirus vaccines in their routine immunization program (3). Rotavirus is the leading cause of diarrhea, accounting for 450,000 deaths yearly (4). About 90% of these deaths occur in developing countries, including Pakistan (5). In Pakistan only, about 23,000-39,000 deaths in children under five years of age are due to rotavirus-related diarrhea. Gastroenteritis caused by the rotavirus is responsible for 30-40% of hospitalizations in the mentioned age group, resulting in significant health and economic burden on Pakistan and other low and middle-income countries in Asia and Africa (2). The U.S. Food and Drug Administration (FDA) has approved vaccines for rotavirus since 2006, but this vaccine has not been included in the EPI in Pakistan (6). In Pakistan, few studies during the last decade reported the epidemiology and genetic diversity of rotavirus in children (7).

Vaccination is an encouraging tool to reduce the mortalities related to rotavirus gastroenteritis. World Health Organization (WHO) endorses the implementation of routine rotavirus vaccination for infants around the globe (2). The Global Alliance for Vaccines and Immunizations (GAVI) was created in 1999 to immunize children even from low socioeconomic countries

(8).

Pakistan is among the countries most affected by the rotavirus-associated diarrhea. Therefore, EPI decided to include its vaccine as a routine vaccination program. This vaccine would be included in a routine vaccination program in two phases. The first phase started in Punjab province in October 2016 and continued in the rest of the country in January 2017. The vaccine is the most effective protection against rotavirus, but it was previously not included as a routine vaccination program in Pakistan because of its high cost.

FUNDING FOR PROJECT

A mission of delegates of health agencies from various countries of the world, which the Deputy Chief Executive of GAVI headed, visited Pakistan in March 2016. They guaranteed that GAVI and other agencies, including the Bill and Melinda Gates Foundation, WHO and UNICEF, would provide funds for the vaccine <https://www.dawn.com/news/1290490>. The GAVI and other world health agencies will cover 80-85% of funding for this project, while respective provincial governments will waive 15-20% of funds (www.tribune.com.pk).

FUTURE CHALLENGES

Storage of vaccination and transportation

The vaccines must travel along a cold chain from their manufacturing unit to those requiring them. At many points, the cold chain is stressed in many low and middle-income countries, and possible failure to dispense new vaccines will endanger lives (9). In developing countries like Pakistan, the cold chain for vaccines is at risk and must be maintained to have vaccines the proper action that is required. In Pakistan, power breakdown is widespread, storage facilities are at risk, and cold chain maintenance is not achieved. Adding to the other factors, the workforce is not adequately trained, which could break the cold chain. The Number of personnel required for accurate administration of the rotavirus vaccine are also not available, which can halt the proper vaccination program in the future.

People's unwillingness to vaccinate their

children against rotavirus

Immunization coverage reports have found many issues related to faulty vaccine coverage, including carelessness on parents' and physician's ends, negligence, communal problems, illiteracy, vaccine cost, socioeconomic position and denial from parents due to child sickness and other issues (10).

Adding to the above-cited facts, it also depends on how people notice concerning peril. There are different opinions about the willingness of people to vaccinate their children. According to one school of thought, people are willing to vaccinate because of their previous experiences. On the other hand, some people take it as a negative thing because, according to them, their child may suffer from acute diseases such as nausea, vomiting, fever, etc (11).

Solutions for prospective challenges

There should be media campaigns on print media, electronic media, and social media to educate common people. In addition, seminars should be held to create awareness among health providers and the general public before the start of this vaccination program. In this way, people will be aware of the safety and efficacy of vaccination. This vaccination program can also be successful by properly utilizing available resources. Lady health workers and male health mobilizers already working in government health departments should be used appropriately to make this vaccination program successful.

To maintain the cold chain and provide suitable health professionals and support technical staff, the federal and respective provincial governments should hire dedicated staff with proper background education and training.

To avoid power interruptions, suitable alternatives should be available so that the cold chain should not be broken, which may prevent the deterioration of the vaccine. In addition, outsourcing can be done by giving contracts to private firms

responsible for maintaining the cold chain.

CONCLUSION

The inclusion of the rotavirus vaccine in routine immunization programs is a significant achievement in Pakistan for health-related issues. However, the proper execution of this program will be a challenge for the government and health agencies in Pakistan. This goal can be achieved through appropriate media awareness campaigns, hiring dedicated personnel and training, and having a properly maintained cold chain to achieve the proper effects.

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DECLARATIONS

Authors' contributions

MW and FA designed the study. SMI, SK, and JA collected the data, analyzed the data and drafted the manuscript. MW and FA critically revised the manuscript. All the authors contributed equally and approved the final manuscript.

Ethical approval

Not applicable

Conflict of interest

The authors declared no conflict of interest among them.

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