Madam, rotavirus-associated gastroenteritis is a significant cause of diarrhoeal illness and under-5 mortality in developing countries such as Pakistan. A 2016-2017 audit report from Pakistan stated that over the preceding four years, rotavirus diarrhoea has been responsible for deaths of 2.6 million children in the country. Given its immense disease burden, vaccination against rotavirus is a key preventive measure that is being implemented globally. In 2017, Pakistan also adopted routine rotavirus vaccination as part of its Expanded Program for Immunization (EPI), representing a major step towards reducing childhood morbidity and mortality from diarrhoeal diseases.

Despite wide temporal and regional diversity of rotavirus strains being reported throughout the Indian subcontinent, a study based in Lahore, Pakistan identified the G2P and G9 genotypes as the most prevalent among children suffering acute gastroenteritis. Nevertheless, it has been shown that rotavirus vaccines (Rotarix and Rotateq) generate heterotypic immune response, providing equivalent efficacy against a vast range of rotavirus genotypes.

Although the monovalent vaccine is generally safe with a favourable benefit-risk ratio, it is associated with the potentially serious, albeit rare, adverse effect of intestinal intussusception. Intussusception refers to intestinal obstruction caused by telescoping of a bowel segment into its adjacent distal segment, and is the commonest cause of acute abdomen in children. Early diagnosis and rapid treatment with barium or contrast enema is critical in a case of suspected intussusception. If the recognition is delayed and if treatment is not instituted promptly, the condition can progress to a surgical emergency; as ischaemic infarction of the obstructed bowel segment can lead to life-threatening complications including bowel perforation and peritonitis.

A meta-analysis reported that rotavirus vaccination markedly increased the risk of developing intussusception, with relative risk within one week of the first dose being 5.71 (95% confidence interval, 4.50-7.25). An Indian study identified odds ratio of 1.34 (not statistically significant) of confirmed intussusception in vaccine-recipients versus placebo-recipients; however incidence rate varied by geography. The risk of vaccine-related intussusception may be minimized by administering the first dose only between 6 and 15 weeks of birth — although the strict upper age restriction has been relaxed by the World Health Organization (WHO) for developing countries, and by avoiding administering to infants with a history of intussusception, intestinal malformation, or chronic gastrointestinal disease. Intussusception presents as colicky abdominal pain, bilious vomiting, “red currant jelly” stool, and a sausage-shaped mass may be appreciated upon abdominal palpation. This clinical picture must be differentiated from normal self-limiting side effects of rotavirus vaccination, i.e. mild fever, vomiting and mild flu-like illness.

With the recent introduction of rotavirus vaccine in EPI Pakistan, it is pertinent to revisit the evidence regarding prevention and best management of vaccine-associated intussusception. While WHO-recommended national post-marketing surveillance is ongoing to further define epidemiology, clinicians must hold a high index of suspicion for dealing with potential cases of rotavirus-related intussusception, to avoid unnecessary delay in diagnosis. Parents should be counselled when the child receives the vaccine dose (at age 6 weeks and 10) on how to recognize alarm features of dehydration or intussusception and when to seek urgent medical attention. Paediatricians, general practitioners, nurses and lady health workers involved in childhood immunization programmes should be sufficiently well-informed to counsel parents, and to identify alarm symptoms warranting immediate intervention.

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References