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LETTER

Rotavirus vaccine: dare to hope

David A Foley, Prabal Mishra

Rotavirus is a highly infectious virus that continues to spread through New Zealand homes and child care centres. By 3 years of age, 90% of New Zealand children will develop this illness.[1] By age 5, 20% seek medical advice with 1 in 43 requiring admission.[2] It can cause a range of symptoms from mild diarrhoea to severe dehydration and shock. It represents a significant burden to the healthcare system, children and their families.

This year, a fully funded penta-valent vaccine has been introduced in New Zealand (RV5 RotaTeq).[3] This live attenuated vaccine is administered orally as part of the immunisation schedule at ages 6 weeks as well as 3 and 5 months.

The vaccine is touted to have high effectiveness against severe rotavirus diarrhoea.[3] A recent publication from America supported this claim, noting a 92% reduction in RV5 recipients and 80% reduction in average admissions for rotavirus coded hospitalisations in 2010–2011 compared with 2001–2006 rates.[4] This is with a combined coverage rate for RV5 (58%) and RV1 (5%) of 63%.

Due to "herd immunity", unvaccinated children also benefit. Compared with pre-vaccinated rates (2001–2006), there was a reduction of rotavirus-coded hospitalisations rates of between 25–77% from 2007–2011 in the unvaccinated group.[4] A similar benefit was found in Australia on the introduction of a rotavirus vaccine with a drop of 70% in hospital admissions.[5] A secondary benefit reported in America was a decrease of 20% in associated seizure-related hospitalisations and emergency department visits in children vaccinated against rotavirus in the year following vaccination.[6]

The New Zealand Government and the Ministry of Health have goals to increase immunisation rates to 95% for 8 month olds and 2 year olds.[7] In 2013 to 2014, rates hit an impressive 91% in 8 month olds.[8] If the government achieves its target, only a minority of children will be at risk of severe infection, with a likely notable positive impact on healthcare services.

The main barrier for this vaccination is the time restriction on catch-up schedules; the first dose should be given before age 15 weeks and the third dose should be given by age 8 months and 0 days.[3] Gastroenteritis is a frequent and known illness, firmly rooted in living memory, and may (as a secondary effect) increase overall vaccination rates. The set time window may encourage timeliness of other vaccinations.[9]

This oral vaccination is generally well tolerated but can include mild diarrhoea or vomiting in the week after vaccination. There is also an associated risk of intussusception, especially in the first week after the first vaccination, estimated between 1 to 7 per 100,000 infants vaccinated.[10] The true rate or increase in incidence of intussusception needs to be established; however, physicians should be mindful of this potential complication.

As this rotavirus season continues, this vaccine offers reason to hope with a potential impact on admissions as early as next year

David A Foley (Dr)
General Paediatrics
Capital and Coast District Health Board
Wellington, New Zealand
dfoley3@tcd.ie

Prabal Mishra (Dr)
General Surgery
Capital and Coast District Health Board
Wellington, New Zealand
Prabal.Mishra@ccdhb.org.nz

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