

HIGH ROTARIX™ VACCINE EFFECTIVENESS AGAINST DIFFERENT ROTAVIRUS GENOTYPES: MODEST RELATIVE INCREASE IN THE PREVALENCE OF G2P[4] IN REMAINING RVGE CASES

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Background and aims: In Belgium, rotavirus (RV) vaccination is recommended since October 2006 and reimbursed since November 2006. This study evaluated the RV genotype-specific vaccine effectiveness (VE), and the genotype distribution over 2.5 RV seasons (February 2008 to June 2010) in Belgium.

Methods: Sequencing methods were used to determine the genotype of RV strains in both vaccinated (n= 70) and unvaccinated (n= 89) children, isolated in 39 Belgian hospitals. Confirmed cases were children age-eligible to be vaccinated against RV (≥ 14 weeks of age and born after 1-October-2006) and hospitalized with PCR-confirmed RVGE.

Results: The VE against RVGE caused by homotypic G1P[8] RV strains in children receiving a Rotarix™ full series vaccination compared to unvaccinated children was found to be 95% [95%CI 77-99%]. Against RVGE caused by heterotypic G2P[4] RV strains, the VE was found to be 85% [95%CI 64-94%]. G4P[8]-specific VE was 90% [95%CI 19-99%]; and G3P[8]-specific VE was 87% [95%CI -5-98%]. Comparison between the genotype distribution among vaccinated and unvaccinated children revealed that less G1P[8] RV strains were isolated in vaccinated children than in unvaccinated children (11/70 vs. 29/89), whereas more G2P[4] RV strains were isolated from vaccinated children (46/70 vs. 34/89).

Conclusions: Subtle differences in VE against G1P[8] and G2P[4] RV strains in addition to natural seasonal fluctuations of strains could explain the higher proportion of G2P[4] strains in the remaining RVGE cases in Belgium. RV vaccination proved highly effective for the prevention of RVGE hospitalizations caused by different RV genotypes, including heterotypic G2P[4].