Yearly report of the Rotavirus Surveillance Network Belgium 2009-2010

Rotavirus surveillance in Belgium

Rotavirus incidence and genotype distribution have been monitored at the Gasthuisberg University Hospital in Leuven since the 1999-2000 rotavirus season. Rotavirus incidence has strongly decreased since the introduction of Rotarix™ (2006) and RotaTeq™ (2007) for four consecutive seasons (Zeller *et al.,* Vaccine 2010, 28(47):7507-13).

The 2009-2010 season is the third season since the establishment of the Rotavirus Surveillance Network Belgium and more than 20 hospitals and private laboratories across Belgium are cooperating in this project, in addition to many paediatricians. In total, 487 samples were genotyped at the laboratory of Clinical and Epidemiological virology during the 2009-2010 rotavirus season. Most samples were collected in the provinces Antwerpen, Vlaams-Brabant and Oost-Vlaanderen (Fig. 1).

Genotype distribution 2009-2010

In figure 2 the genotype distributions of the samples collected by the Rotavirus Surveillance Network Belgium from 2007-2008 until 2009-2010 are shown. As in previous seasons, G2P[4] was the most abundant genotype in 2009-2010 (62.4%), followed by G1P[8] (25.5%), G4P[8] (3.7%), G9P[8] (3.3%), G12P[8] (2.9%) and G3P[8] (1,8%). In addition one G9P[6], one G12P[6], one G3P[6] and two G6P[14] rotavirus strains were found.

Delayed onset and peak incidence of the rotavirus season

Since the vaccine introduction, a gradual delay in the onset of the epidemic and the peak incidence was observed at the Gasthuisberg University Hospital. Before vaccine introduction, the average peak incidence in a rotavirus season was in February, but after vaccine introduction the peak incidence gradually delayed to March (2006-2007 and 2007-2008), March-April (2008-2009), and for the 2009-2010 season most rotavirus cases were observed in April (Fig. 3).

Conclusions

Both Rotarix™ and RotaTeq™ perform very well in the prevention of rotavirus gastro-enteritis, as has been shown in many publications worldwide, and as many of you might have experienced in your practice. The 2009-2010 rotavirus season is the third consecutive season that the proportion of G2P[4] genotypes has increased in the remaining RV cases collected by the Rotavirus Surveillance Network Belgium. Whether this is related to the vaccine introduction, natural genotype fluctuation or a combination of both remains to be further investigated. However, in order to keep evaluating the effects of vaccination on the rotavirus population, and to monitor the possible appearance of animal-like genotypes (G6, P[6], P[14], etc.) into the human rotavirus population, it will be important to continue the rotavirus surveillance in Belgium. Belgium is one of the few countries in the world with a very high rotavirus vaccination coverage, which makes it ideally suited to investigate the impact of the vaccines on the rotavirus genotype distribution.

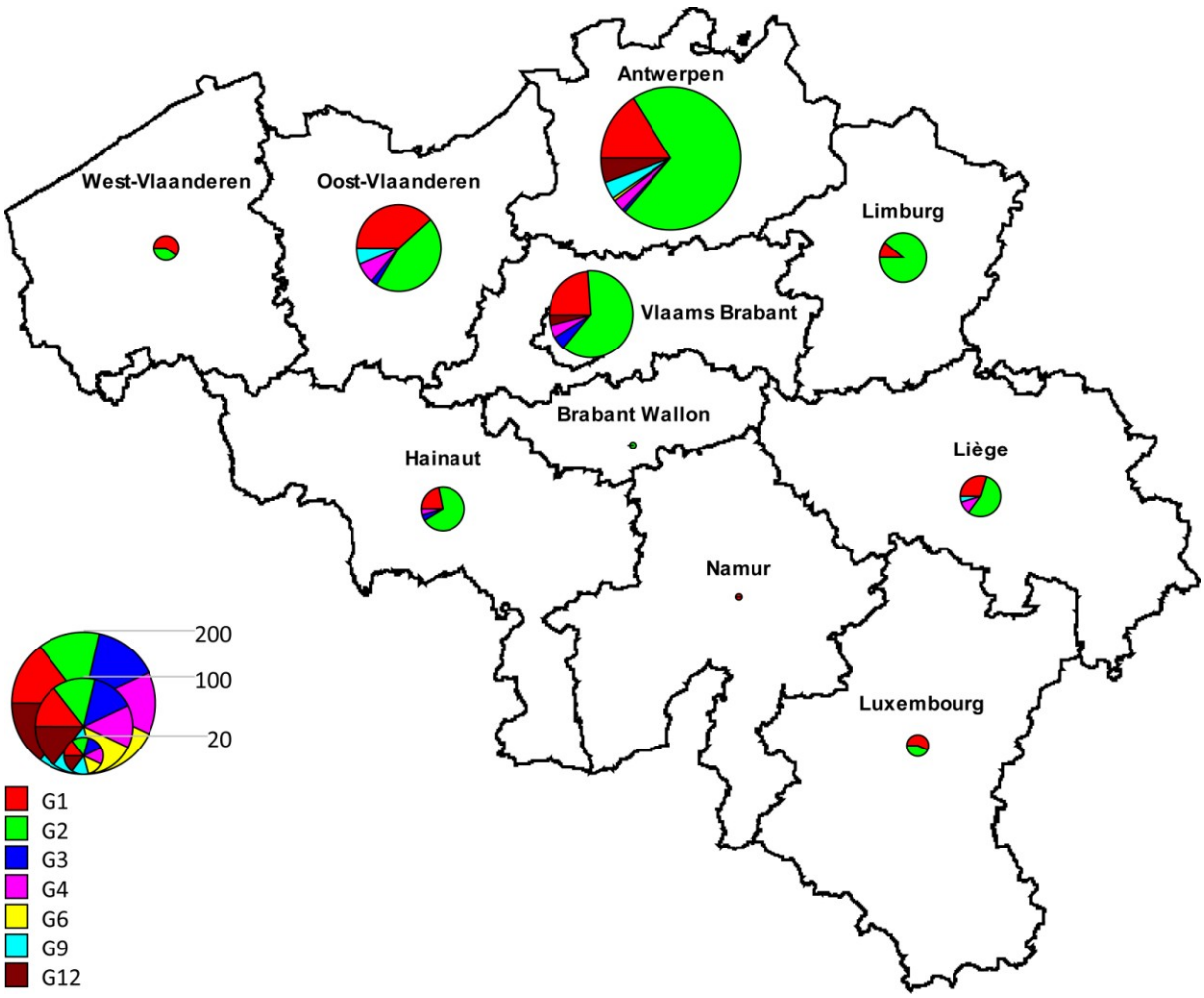

Fig. 1. Rotavirus sample distribution per province in 2009-2010

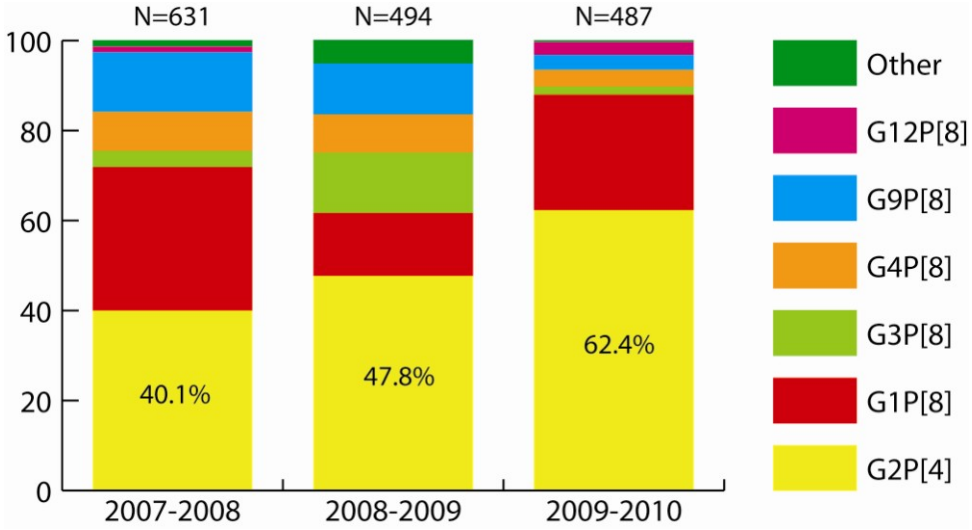

Fig. 2. Rotavirus genotype distribution per season of samples collected by the Rotavirus Surveillance Network Belgium from 2007 until 2010

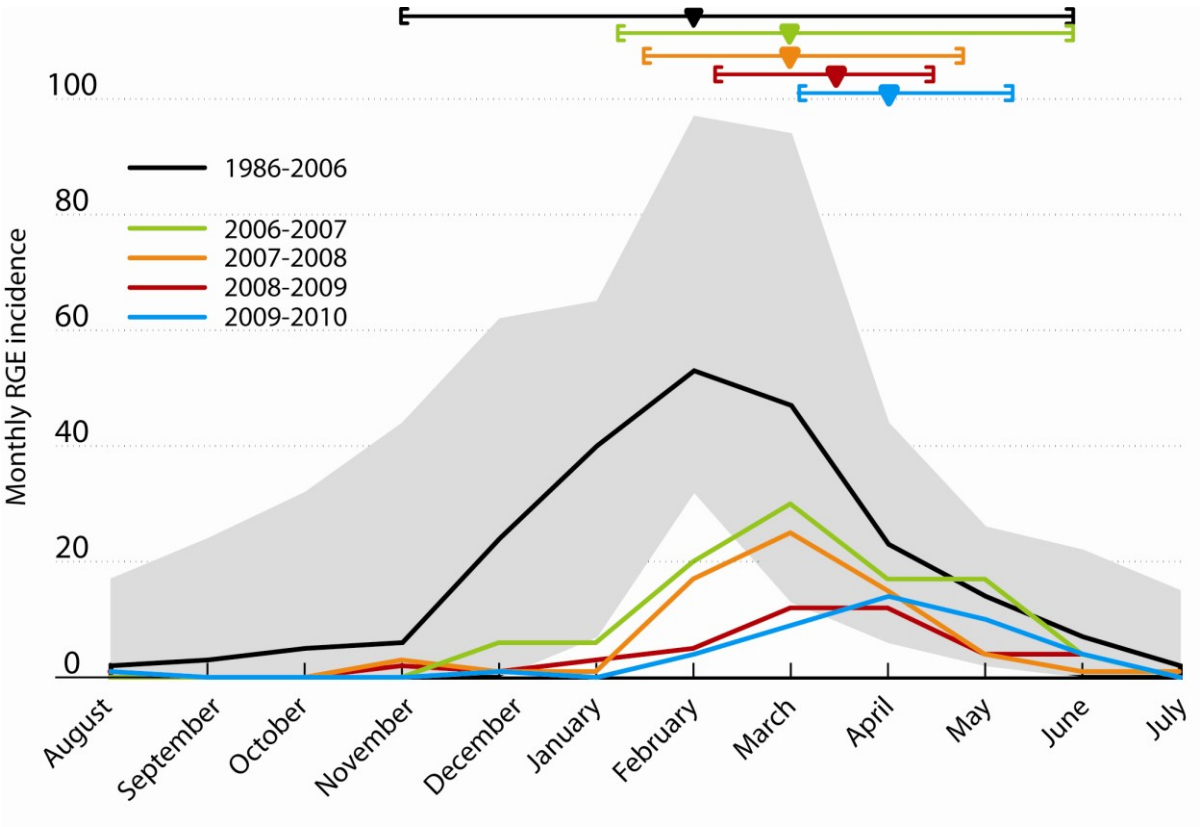

Fig. 3. Number of hospitalized GE cases tested rotavirus positive at the Gasthuisberg University Hospital per month of year. The black line indicates the median number of rotavirus positive cases in a particular month from 1986–1987 until 2005–2006. The shaded area indicates the minimum and maximum number of rotavirus positive cases in a particular month from 1986–1987 until 2005–2006. Colored lines indicate the number of rotavirus positive cases in a particular month in the 2006–2007, 2007–2008, 2008–2009 and 2009-2010 season, respectively. The bars above the graph are color-coded according to season and indicate the length of a rotavirus season. Inverted triangles indicate the peak incidence during the season