PEDIATRIC ROTAVIRUS INFECTION: GENOTYPES DISTRIBUTION IN A SURVEILLANCE SINCE 2008 IN MILAN

Rimoldi Sara Giordana[1], Monini Marina[1], Stefani Fabrizio[2], Pagani Cristina[1], Lisa Chenal[1], Loredana Tocalli [1], Longobardi Tina Fiore Lorenza [1], Zuccotti Gian Vincenzo[4], Ruggeri Franco Maria[3], Gismondo Maria Rita[1]

[1]Microbiology Unit University Hospital L. Sacco. Milan, Italy. [2]Department of Biotechnology and Biosciences, University of Milano-Bicocca Milan, Italy. [3]Department of Food Safety and Veterinary Public Health. ISS. Rome. Italy. [4]Paediatric Unit University Hospital L. Sacco Milan Italy

Rotavirus are classified into seven different serogroups (A- G) based on the antigenic specificity of the cased proteins VP6. Grou A rotaviruses are the major cause of gastroenteritis in infants and young children worldwide.
From January 2008 to March 2011, seven hundred children (samples average age 22 mos, males 66%) suffering from acut gastroenteritis were admitted to Pediatric Unit of L. Sacco University Hospital, in the north-west areas of Milan. Stool specimen were tested with the commercial rapid *in vitro* qualitative ImmunoCardSTAT (Meridian, Cincinnati USA). Positive sample were G and P typed with RT and nested PCR.
Rotavirus A was the cause of acute gastroenteritis in 84 children (12%); 71 out of 84 samples were available for genotyping investigation.
The distribution of the different genotypes showed a prevalence of 87% (62 cases) of the G1P[8], followed by G9P[8] (3 cases 4,2%) and G4P[8] (3 cases 2,8%) G12P[8], G10P[8], G2P[8], G3P[8] are reported in one single case each (1.4%). Gastroenteriti were rated as mild, moderate and severe in 9 (11%), 40 (49 %) and 33 cases (40%) respectively. G1P[8] strain was mainly detected in 42% (28 cases) of moderate gastroenteritis and in 30% (20 cases) of serious gastroenteritis. In only 2 cases (3%) wa identified in minor gastroenteritis. G2P[8] and G3P[8] were reported in one case as moderate gastroenteritis. G4P8 strain claimed f minor and 1 serious gastroenteritis respectively. G9P[8] genotype was detected in 2 minor and 1 moderate rotavirus infection G10P[8] and G12P[8] strains were detected in 1 minor case and moderate gastroenteritis respectively.
Our rotavirus epidemiological evaluation reveals the detection of common genotypes G1, G2, G3 and G4, that circulate in Europe during the last years. We observed an increased detection of rotavirus G9 and G10 as reported in Europe and in Italy. Clinical data revealed the presence of severe gastroenteritis in 30% of cases due to G1P[8] and in G4P[8] in 1.4% of cases.

ORAL IMMUNIZATION OF MICE WITH LACTOCOCCUS LACTIS EXPRESSING THE ROTAVIRUS VP8* PROTEIN

Rodriguez-Diaz Jesus, Montava Rebeca, Viana Rosa, Buesa Javier, Perez-Martinez Gaspar, Monedero Vicente

Laboratorio de Bacterias Lacticas y Probioticos. Instituto de Agroquimica y Tecnologia de Alimentos. (IATA. CSIC). Spain

The efficacy of recombinant Lactococcus lactis as a delivery vehicle for a rotavirus antigen was evaluated in a mouse model. The rotavirus VP8* protein was expressed intracellularly and extracellularly in L. lactis wild type and in an alr mutant deficient in alanine racemase activity, necessary for the synthesis of the cell-wall component D-alanine. When the mucosal immune response was evaluated by measuring VP8*-specific IgA antibody in faeces, wild-type L. lactis triggered a low IgA synthesis only when the secreting strain was used. In contrast,VP8*-specific IgA was detected in faeces of both groups of mice orally given the alr mutant expressing extracellular VP8* and intracellular VP8*, which reached levels similar to that obtained with the wild type secreting strain. However, oral administration of the recombinant strains did not induce serum IgG or IgA responses. L. lactis cell-wall mutants may therefore provide certain advantages when low-antigenic proteins are expressed intracellularly. However, the low immune response obtained by using this antigen-bacterial host combination prompts to the use of new strains and vaccination protocols in order to develop acceptable rotavirus immunization levels.