

P1854

Poster Session VI

Paediatric infections

**EPIDEMIOLOGY OF ACUTE GASTROENTERITIS IN HOSPITALIZED CHILDREN IN NW GREECE DURING A 12- YEAR PERIOD**

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**Objectives:** Acute gastroenteritis remains a leading cause of morbidity among infants and children throughout the world. The aim of this study was to determine the etiology of acute diarrhea in hospitalized children under 5 years of age in Northwest Greece during a 12-year period and to improve knowledge of the etiology of gastrointestinal pathogens using conventional and molecular diagnostic techniques.

**Methods:** From 2001 to 2012, 7278 faecal samples from consecutive children under 5 years old (median age 14 months) who presented with acute diarrhea were collected from five hospitals in NW Greece. Stool samples were screened for the presence of rotavirus (group A), adenovirus, astrovirus and norovirus antigens by EIA (IDEIA; DAKO Cytomation, Angel Drove, UK). Rotavirus presence was also investigated by molecular methods and positive samples during 2011-2012 seasons were genotyped by semi-nested PCR using specific primers for VP7 and VP4 gene. In addition, Adenovirus detection was further performed using the Adenovirus Consensus kit (BioMerieux, France). Various common bacteria and parasites associated with acute gastroenteritis were investigated by conventional techniques.

**Results:** Etiologic agents were detected in 2819 cases (38.73%). Monobacterial infections were detected in 611 (21.68%) cases (*Salmonella spp.* in 394, *Shigella spp.* in 11, *Campylobacter jejuni* in 186, *Yersinia enterocolitica* in 8, *E. coli* in 6, *Aeromonas hydrophila* in 6), while single viral infections were identified in 2112 children (74.92%). Mixed infections were found in 3.4% of positive samples. Viral-bacterial coinfection was found in 42 (1.48%) cases and viral-viral coinfection in 54 (1.92%) cases. No sample was positive for parasites. Viral pathogens were identified in 2208 children (30.3%): Group A rotavirus was detected in 1559 (21.42%) cases (1493 mono-infections, 48 virus-virus coinfections and 18 virus-bacteria coinfections), adenoviruses in 246 (3.38%) cases (218 mono-infections, 22 virus-virus coinfections and 6 virus-bacteria coinfections), astroviruses in 168 (2.3%) cases (110 mono-infections, 40 virus-virus infections and 18 virus-bacteria) and noroviruses in 291 cases (3.99%) (mono-infections). Molecular techniques resulted in an increase in detection of rotavirus and adenovirus cases by c. 10%, increasing the overall diagnostic efficacy by 2.5%. The most predominant Rotavirus genotype was G1P8 (48%) and Adenovirus strains detected belonged mainly to subgenus F (71.1%).

**Conclusion:** Viruses, mainly Rotavirus group A was the leading cause of acute gastroenteritis with the most significant role in hospitalized children with severe diarrhea in Greece. Since the majority of cases remain of unknown cause, further studies will be necessary to augment our knowledge in the aetiology of enteric infections which will be helpful in the rational application of effective vaccines.