Viral etiology of acute gastroenteritis among hospitalized patients in Doha, Qatar: A pilot study

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Introduction:
Acute gastroenteritis is a widespread disease that is characterized by diarrhea, vomiting and abdominal pain. It has high morbidity and mortality rate globally. Bacteria, parasites and mostly viruses cause acute gastroenteritis. Most frequent viruses are norovirus, adenovirus, astrovirus and rotavirus.

Objectives:
To determine the prevalence of the four viruses in the stool samples of patients who were treated at HGH with complaints of acute gastroenteritis. The samples which had been submitted to the microbiology laboratory at HGH, were analyzed by real time-PCR method at Qatar University. The second objective was to compare between ELISA, IMCG and RT-PCR in terms of sensitivity and specificity.

Methodology:
288 stool samples and corresponding patients’ data were obtained from microbiology laboratory in HMC between 15-Jun-2009 to 1-Nov-2009. They were transported to the research lab of biomedical science program- Health Department at Qatar University, where laboratory experiments involving RT-PCR were performed. Statistical analysis was carried out using Excel program.

Results:
Out of total 288 fecal samples, 131 (45.5%) were positive for the presence of viruses that cause gastroenteritis. Norovirus (28.5%) was the most prevalent, followed by rotavirus (10.4%), adenovirus (6.25%) and astrovirus (0.30%).

Conclusion:
Norovirus is the most common source of acute gastroenteritis among hospitalized patients, followed by rotavirus. Real time-PCR technique used in this study was found to be more sensitive and specific. By taking RT-PCR as a reference, ELISA and IMCG are found to be similarly low in sensitivity and specificity.