Announcer:
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Diarrhea due to enteric viral pathogens causes significant morbidity and mortality for both children and adults. Globally, there are nearly 1.7 billion cases of childhood diarrheal disease every year, and though it's both preventable and treatable, diarrhea represents the second leading cause of death in children less than 5 years old.[1]

A number of commercially available diagnostic systems for the detection of enteric pathogens have recently been developed. Among them, the BD MAX™ Enteric Viral Panel, or MAX EVP, is designed to detect the most common enteric viruses including norovirus, sapovirus, astrovirus, rotavirus, and adenovirus.

A recent study from the University of Calgary aimed to evaluate the performance of the MAX EVP assay in determining the presence of these enteric viral pathogens in patients with symptoms of acute gastroenteritis, enteritis, or colitis.[2]

Over 1,800 stool specimens were tested from symptomatic patients across a wide variety of age groups, patient locations, and geographic areas[2]. Prospective specimens were included if they were from pediatric or adult patients suspected of having gastroenteritis, enteritis, or colitis.[2] Retrospective samples, either in a Cary-Blair medium or unpreserved, were alternatively used when prospective samples failed to provide an adequate number of positive specimens for specific viruses.[2]

Both prospectively and retrospectively collected stool specimens were compared to a reference method that was performed at an internal Becton, Dickinson and Company (BD) site in Sparks, Maryland.[2] The prevalence for prospectively collected specimens was 7.3 percent for norovirus, 4.5 percent for sapovirus, 3.5 percent for astrovirus, 2.4 percent, for rotavirus, and 1.2 percent for adenovirus.[2]

Viral enteropathogen prevalence was highest among younger age cohorts, with the majority detected among patients age 12 years and younger.[2] Negative percent agreement, or NPA, values were greater than or equal to 99 percent for all viral targets and were consistent across specimen types and specimen collection methods within each viral group.[2] Meanwhile, positive percent agreement, or PPA, values were greater than or equal to 90 percent for 4 out of 5 viral targets.[2] Sapovirus had a PPA of 84.9 percent in these analyses, which was lower than what an analysis from previous work had found (PPA of 100 percent)[2]. Further preliminary head-to-head testing between MAX EVP and a commercially available multiplex assay revealed high concordance relative to the reference method.[2]

Based on these results, the study authors concluded that the MAX EVP performance was consistent and robust across the five viral targets by age, gender, and stool collection method.[2] This suggested a potential use of the MAX EVP assay individually as a selective diagnostic test for patients at high risk for a viral enteropathogen, or as an additive assay to other BD MAX panels such as the BD MAX Enteric Bacterial panels.[2]

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References:

1. WHO Fact Sheet, April 2013, http://www.who.int/mediacentre/factsheets/fs330/en/
2. Shafiq Butt et al. Detection of Entric Pathogens from Unpreserved and Cary-Blair Preserved Stool Specimen: Clinical Validation of the Molecular-Based BD MAX™ Enteric Viral Panel