Surveillance and Comparison of Human Astrovirus Circulation in Hospitalized Children and Outpatients with Acute Diarrhea in Shanghai

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Background/Objective
This study was to investigate and compare the dynamic epidemic characteristic of human astrovirus (HAstV) between outpatients and hospitalized children with acute diarrhea. And to provide theoretical bases for prevention and control of HAstV diarrhea.

Method
A total of 298 cases and 360 specimens were randomly collected from inpatients (during January 2008 to December 2010) and outpatients (during August 2010 to July 2011) <5 years old with acute diarrhea in Children's Hospital of Fudan University, respectively. The selected samples were subjected to reverse transcriptase PCR (RT-PCR) or PCR to detect and genotype rotavirus (RV), human calicivirus (HuCV), HAdV and HAstV.

Result
1. Molecular epidemiology of HAstV in hospitalized children between 2008-2010 as follows: Among the included 298 samples, HAstV was detected in 27.2% (81/298) of the patients with a downward trend from 2008 to 2010, 33.9% (42/124)，33.8% (25/74), 14.0% (14/100), respectively. Episodes of HAstV diarrhea occurred year-round, with two peaks in January and April. And all the episodes of HAstV were mixed with other diarrhea viruses. 2. Molecular epidemiology of HAstV in outpatiets with diarrhea between 2010-2011 as follows: The overall incidence of HAstV was 1.9% of the 360 cases collected from August 2010 to July 2011. The seasonal distribution of HAstV's gastroenteritis showed a peak in November (42.9%, 3/7). All of mix infection was dual infection among of enteropathogenic viruses and was identified in 4 cases with RV+HAstV as the most co-infection。3. All of the detected HAstVs, including inpatients and outpatients, belonged to HAstV-1.

Conclusion
There was a obviously difference in the detectable rate of HAstV in inpatients and outpatients with diarrhea in Shanghai and it played a certain role in nosocomial infections in hospitalized chidren. These data will provide baseline information for prevention and control of HAstV diarrhea in this area.