**Prevalence of viral enteric pathogens causing infection and acute gastroenteritis during the first year of life: PREVAIL birth cohort study**

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*Background:* Birth cohort studies conducted in low- to middle-income countries have shown that noroviruses and sapoviruses are high-exposure pathogens associated with infection and acute gastroenteritis (AGE) in infants and young children. PREVAIL (Pediatric Respiratory & Enteric Virus Acquisition and Immunogenesis Longitudinal study) is a birth cohort study conducted in the United States investigating the natural history and immunity to common viral pathogens associated with AGE. Here, we present PREVAIL data on the prevalence of viral pathogens causing infection and AGE in the first year of life.

*Methods:* Stool specimens and symptom status questionnaires were collected at birth, weekly, and during AGE events between 2017-2020 for enrolled mother-infant pairs (n=245). Routine and AGE stools were screened for 17 viral, bacterial and parasitic pathogens by the xTag Gastrointestinal Panel. Stools positive for norovirus were tested by realtime RT-PCR and genotyped. All stools were also tested for sapovirus and astrovirus by realtime RT-PCR. AGE was defined as ≥ 3 loose stools in 24 hour and/or ≥ 1 vomiting episodes within 24 hours. Asymptomatic stools were defined as those collected >28 days after or >4 days before an AGE episode.

*Results:* During the first year of life, 755 stools from symptomatic infants and 5,946 stools from asymptomatic infants were collected. Among viral enteric pathogens, stool prevalence was highest for norovirus GII (13.1% of symptomatic and 4.1% of asymptomatic stools, p<0.01) and sapoviruses (6.1% of symptomatic and 1.8% of asymptomatic stools, p<0.01). Other viruses included astrovirus, wild-type rotavirus, adenovirus 40/41 and norovirus GI, together present in 7.8% of symptomatic and 3.3% of asymptomatic stools. Co-infection was common with *C. difficile*, which was present in a substantial portion of symptomatic (10.5%) and asymptomatic (8.1%) stools (p=0.03). GII.4 Sydney (13.9%), GII.3 (13.2%), and GII.6 (12.6%) norovirus genotypes were most often detected regardless of symptom status.

*Conclusions:* Norovirus GII was the most prevalent viral AGE pathogen detected in infants during the first year of life and was more commonly detected in symptomatic versus asymptomatic children. Further work includes testing year 2 stool specimens and to examine the impact of repeat infections by homotypic and heterotypic genotypes on the immunological response to infection, to further our understanding of infection, disease, and immunity.

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