Prevalence of Viral Enteric Pathogens Causing Infection and Acute Gastroenteritis During the First Year of Life – Ohio, 2017–2020

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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 young children, however, similar data are lacking in high-income countries. PREVAIL (Pediatric Respiratory and Enteric Virus Acquisition and Immunogenesis Longitudinal study) is a birth cohort study conducted in Cincinnati, Ohio investigating the natural history and immunity to common viral enteropathogens. Here, we present PREVAIL data on the prevalence of viral enteropathogens 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 infants (n = 245). All stools were screened for 19 viral, bacterial and parasitic pathogens by the xTAG® Gastrointestinal Pathogen Panel and/or reverse transcription-polymerase chain reaction. Those positive for norovirus were genotyped. AGE was defined as ≥3 loose stools 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. Pathogen prevalence was compared using the chi-square test.

**Results:** During the first year of life, 755 symptomatic and 5,946 asymptomatic stools were collected. Prevalence was highest for norovirus GII (13.1% of symptomatic and 4.1% of asymptomatic stools, *P* <.01) and sapovirus (6.1% of symptomatic and 1.8% of asymptomatic stools, *P* <.01). Astrovirus, rotavirus, adenovirus 40/41 and norovirus GI, together, were present in 7.8% of symptomatic and 3.3% of asymptomatic stools. 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 enteropathogen detected in stools during the first year of life and was more commonly detected in symptomatic versus asymptomatic children. Further work is needed to examine repeat infections to improve our understanding of infection, disease, and immunity.

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