Diagnostic Yield of the BioFire FilmArray Gastrointestinal Panel in Hospitalized Children at an Academic Children’s Center

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Abstract

Background: The BioFire FilmArray Gastrointestinal Panel (GIP) is a multiplex stool PCR test that detects 22 organisms. Studies in adults suggest that the diagnostic yield of the GIP in hospitalized patients is low. The utility of the GIP among hospitalized children is unknown.

Study objective

Assess diagnostic utility of the GIP in hospitalized children:
- Study design: retrospective cohort study
- Setting: an Academic Children’s Center
- Materials and methods: blood was drawn in 155 individual pediatric patients. Clinical, and laboratory information was extracted from the medical record. Statistical analysis was completed using JMP Pro 13.0.0 (SAS Institute Inc).

Results – overall

- Positive GIP in 42% (n=81) of tests
- 44% of patients immunocompromised
- 22% two
- 1% 3

no difference in GIP results treated vs. not treated

GI symptoms

Ordering teams

- General Pediatrics
- Infectious Disease
- Gastroenterology
- Pediatrics
- Pediatric surgery

GIP results and treated pathogens

Immunocompromised patients

Study findings

- No difference in GIP results: despite high diagnostic yield, stooling vs. non-stooling before vs. after treatment
- Pediatric Infectious Diseases team consulted in 19% of patients at least once the GIP ordered
- Pediatric Infectious Diseases team consulted in 19% of patients at least once the GIP ordered

Conclusions

- GIP most commonly ordered by General Pediatrics and used to rule out infection
- GIP positive for one or more pathogens in 24% of hospitalized children
- Yield in children appears to be higher than reported among adults
- C. difficile most common pathogens in 40% of children
- GIP results in specific therapy in 60% of positive tests

References