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Spectrum of Enteropathogens detected by the FilmArray® GI Panel in a Multicentre Study of Community-acquired Gastroenteritis.

Spina A., Kerr KG., Cormican M., Barbut .F, Eigentler A., Zerva L., Tassios P., Popescu GA., Rafila A., Eerola E., Batista J., Maass M., Aschbacher R., Olsen KEP., Allerberger K.

This quarterly point-prevalence study analyzed stool samples received at ten participating European clinical microbiology laboratories. Performance of the FilmArray® Gastrointestinal (GI) Panel was compared to conventional techniques.

A total of 709 specimens from the ten participating countries were submitted for the study on four specified days. Specimens were collected from patients of all ages with community-acquired gastroenteritis. Specimens were routinely tested according to local laboratories' standard operating procedures, and then each laboratory transferred aliquots to a central laboratory for testing with the FilmArray® GI Panel.

The FilmArray® GI Panel detected at least one organism in 384/709 (54.2%) specimens, compared to 128/709 (18.1%) when testing was performed using conventional techniques. Of the positive specimens received, 268/709 (37.8%) yielded one organism, and 116/709 (16.4%) yielded multiple organisms. The most commonly occurring co-infection was *Campylobacter* with EPEC, followed by triple infection with EAEC, EPEC, and ETEC*. With the exception of *Entamoeba histolytica* and *Vibrio cholerae*, all 22 of the pathogens targeted by the FilmArray® GI Panel were detected at least once.

Overall, this study demonstrates that multiplex screening can optimize the yield from stool specimens and may improve the timeliness of diagnosis compared to conventional microbiological techniques.

* EAEC = enteroaggregative *E. coli* ; EPEC = enteropathogenic *E. coli* ; ETEC = enterotoxigenic *E. coli*.

"We conclude that multiplex screening can optimize the yield from stool examinations, [and] can dramatically improve the timeliness of diagnosis."

KEY POINTS

- ➔ In this European study, the FilmArray® GI Panel detected at least one organism in 54% of the samples, compared with at least one organism in 18.1% of samples using local laboratory protocols.
- ➔ There is considerable potential for multiplex PCR to improve routine stool diagnostics in community-acquired diarrhoea.
- ➔ Multiplex molecular diagnostic tests for GI show a much higher sensitivity than traditional methods, allowing to significantly increase the identification of etiologies and thereby contributing to improved patient management.