

Title: Evaluation of the QIastat-Dx Gastro-intestinal Panel at the University Hospital of Liege (Belgium)

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Background: The QIastat-Dx Gastro-intestinal panel (QIastat-Dx GI panel, Qiagen) detects the 24 most common gastro-intestinal pathogens by using qualitative real-time-PCR in stool samples. The system delivers results within 70 minutes with Ct values and amplification curves. The purpose of this study was to evaluate the QIastat-Dx GI panel at the University Hospital of Liege (CHULiège) in comparison with the results obtained with the current techniques available in the laboratory.

Materials/methods: From 06/23/19 to 07/04/19, all stools addressed to the Microbiology lab for bacteriological, parasitological or virological analysis were tested with the QIastat-Dx GI panel and the current diagnostic methods. These methods included bacteriological culture, *Clostridium difficile* antigenic tests (GDH and toxins A/B, Meridian), microscopy and rapid tests (Alere) for parasites.

Results :

	Positive GI panel N (%)	Positive detection by current methods N (%)	Discrepancies N (%)
<i>Escherichia coli</i> (enteroaggregative, enteropathogen, enterotoxinogen and enteroinvasive)	26 (43)	(0)*	26
<i>Campylobacter</i> species	13 (21)	9 (14)	4
<i>Clostridium difficile</i>	13 (21)	9 (14)	4
<i>Salmonella</i> species	1 (2)	0	0
Virus (Norovirus, Adenovirus, Sapovirus)	6 (10)	6 (9)	0
<i>Giardia lamblia</i>	2 (3)	1 (1.6)	1
Total	61 (34)	25 (40)	35

A total of 180 samples collected from 126 patients were included. Out of these samples, 51 (28%) were tested positive with the QIastat-Dx panel with 61 pathogens detected in total. Co-infections were identified in 8 patients (4.5%). Four *Campylobacter* detected by PCR which were not confirmed by culture nor by antigenic tests. Besides, 4 out of 13 *C. difficile* toxin-positive results detected by the GI panel were not confirmed by antigenic test or by culture. The results are summarized in the table 1. All discrepancies were in favor of the GI panel which show better sensitivity.

*not detectable by current methods

Table 1. Summary of the results.

Conclusions: The QIAstat-Dx GI panel can detect many pathogens with higher sensitivity than the current non-PCR lab methods. The availability of Ct levels allow the evaluation of the nucleic acids content helping for differentiation between colonization and infection. The panel has a potential to improve the patient quality of care with reduction of turn-around time to result.

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