EV0580

ePoster Viewing

Diagnostic/laboratory methods other than molecular

When and how to process diarrhoeic stools for *Clostridium difficile* infections diagnosis?

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Objectives:

To evaluate the performance of an algorithm for diagnosis of *Clostridium difficile* infection (CDI) using the detection of glutamate dehydrogenase (GDH) as screening followed by a confirmatory test. We have compared the performance of an enzyme immunoassay (EIA) and a polymerase chain reaction (PCR) to detect toxins to the toxigenic cultures. We have also analyzed the improvement for CDI diagnosis expanding testing to patients with community-acquired diarrhea independently of the request.

Methods

Between October 2013 and April 2014, all unformed stools samples submitted to our laboratory from patients older than 2 years were processed following a three-step algorithm using EIA GDH as screening. Positive samples were followed by confirmation with *C. difficile* Toxins A+B test. The Toxin A+B negative stools were tested by Illumigene *C. difficile*® loop-mediated isothermal amplification (PCR) assay. The total of GDH positive samples were tested by EIA, PCR and toxigenic culture (microbiologic reference standard).

CDI was defined as a patient without a positive test during the previous 8 weeks. Community-acquired (CA)-CDI was defined as case in which symptoms onset in the community with no healthcare facility admission within 12 weeks. Demographic, ambulatory healthcare and antimicrobial exposure data were collected through medical record review.

Results:

In total, 483 stool specimens were processed. Twenty-five (5,2%) samples were identified as positive by toxigenic culture. Toxin EIA testing identified 12 (48%) cases and PCR detected 24 (96%) cases. We found one positive PCR result that was not confirmed through the toxigenic culture.

Among CDI cases, 40% (10 cases) were hospital acquired and 60% (15 cases) had onset in patients non-hospitalized. Of all outpatients, 46.66% required hospitalization and 53.33% presented to the emergency department. One of these patients required admission to intensive care unit. Among these cases, 60% (9 cases) had no recent exposure to healthcare settings. All patients but one had some risk factor like recent antibiotic exposure.

Most samples (96%; 112/117) that had not a request of CDI diagnosis were from outpatients. *C. difficile* test was positive in 3 patients and there was only one patient without risk factors for CDI.

Conclusions

The multiple step approach is an effective testing algorithm for CDI. Illumigene *C. difficile*® (PCR) assay was sensitive, rapid and easy to use.

The prevalence of CA-CDI in people without risk factors is low and clinical suspicion of the illness at our institution is optimal. We therefore believe it is unnecessary to process all unformed stools independently of the request.