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Poster Session III

Diagnosis of *Clostridium difficile* and other gastrointestinal infections

RAPID-TEST IMMUNOCARD STAT! CGE FOR DETECTION OF INTESTINAL PARASITES DIRECTLY ON FAECAL SAMPLES

A.L. Engsbro¹, H.B. Eriksen¹, A. Friis-Møller¹

¹Department of Clinical Microbiology, Hvidovre Hospital, Hvidovre, Denmark

Objective: Microscopy of faeces is standard in many laboratories when testing for intestinal parasites. This is laborious and demands expertise. ImmunoCard STAT! CGE (IC-CGE) is an Elisa-based rapid-test useable by non-expert lab technicians detecting antigens for *Giardia intestinalis* (GI), *Entamoeba histolytica* (EH) and *Cryptosporidium parvum* according to the manufacturer. We aimed to investigate the ability of IC-CGE to detect the three parasites in patient samples from our lab with microscopy-proven pathogenic or nonpathogenic parasites, and to evaluate the implementation of IC-CGE in our department.

Methods: Initially, 40 fecal samples microscopy-positive for *Cryptosporidium* spp. 5; GI 13; *Entamoeba histolytica/dispar* (EH/D) 2; GI & EH/D 5; or positive for parasites considered nonpathogenic (*Dientamoeba fragilis*, *Blastocystis* spp, *Endolimax nana*, *Entamoeba coli*) 15, were tested by IC-CGE. Samples had been stored at minus 80 degrees and were thawed before testing according to the manufacturer's instructions. The IC-CGE was implemented in the department, and results evaluated after 2 months. All antigen-positive samples were investigated by microscopy. Real-time PCR for EH and *Entamoeba dispar* (ED) were performed on all microscopy- or IC-CGE-positive samples.

Results: Agreement between microscopy and IC-CGE was 83% (kappa 0.64, good agreement) in the initial testing. 2 microscopy-negative samples were positive for GI. In one case, the subsequent submitted sample was microscopy-positive for GI. 5 microscopy-positive samples were IC-CGE negative. On re-test with a bigger inoculum one became IC-CGE- positive for GI and EH consistent with the microscopy, however, PCR detected ED. 3 samples, initially microscopy-positive for GI, EH/D and GI & EH/D, respectively, were negative on re-microscopy. PCR could not confirm EH/D in the 2 samples found by microscopy. 1 sample with EH/D was still positive on re-microscopy; PCR confirmed ED. The test did not cross-react with *D. fragilis*, *Blastocystis* spp, *E. nana* or *E. coli*. Of 2079 samples received during the first two months after implementation, 18 samples were positive for GI (0.86%) and 4 for *Cryptosporidium* (0.19%) by IC-CGE which was comparable to the prevalence in our lab in 2012 (GI 0.98%, *Cryptosporidium* 0.18%). All samples were microscopy-positive. IC-CGE detected EH in 5 samples; 2 were PCR-confirmed as ED, and 3 were PCR-negative.

Conclusion: ImmunoCard STAT! CGE is a rapid and sensitive test for *Giardia intestinalis* and *Cryptosporidium*. During initial testing, the test detected cases that would otherwise have been missed by microscopy. However, the prevalence of positive samples did not increase during the two first months after implementation. Like microscopy, IC-CGE does not differentiate between *Entamoeba histolytica* and *Entamoeba dispar*. The test is easily implemented in the laboratory, test results are available the same day and IC-CGE can reduce expert lab technician time. IC-CGE does not detect helminths for which microscopy is still needed in selected cases.