DIFFERENCES IN THE DETECTION OF Cryptosporidium AND Cystoisospora OOCYSTS BY DIFFERENT LABORATORY METHODS

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Despite the availability of many parasitological methods for detection of Cryptosporidium and Isospora (Cystoisospora) belli in fecal samples, there are uncertainties about the accuracy of these techniques in laboratory practice. In this study, 27 formalin-fixed positive stool samples for Cryptosporidium and 15 for I. belli were analyzed by two concentration methods, sedimentation by centrifugation (SC) and formalin-ethyl acetate (FE), and by three tintorial techniques, modified Ziehl-Neelsen (ZN), Safranin (SF) and Auramine (AR). No significant differences were observed on Cryptosporidium identification between concentration methods, while a significantly higher number of I. belli oocysts (p<0.0001) was detected in fecal smears concentrated by the SC than by FE method. Fecal samples processed by FE produced a median oocyst loss to the fatty ring of 34.8% for Cryptosporidium and 45.4% for I. belli. However, FE concentration provided 63% of Cryptosporidium and 100% of I. belli slides classified as superior for microscopic examination. Regarding the efficiency of staining methods, a more significant detection of Cryptosporidium oocysts was observed in fecal smears stained by ZN (p<0.01) or AR (p<0.05) than with SF method. Regular to high quality slides for microscopic examination were mostly observed in fecal smears stained with AR or ZN for Cryptosporidium and with SF or ZN for I. belli. This study suggests a great variability in oocyst power detection by routine parasitological methods and that the most frequent intestinal coccidians in humans have specific requirements for concentration and staining.

Key-words: Cryptosporidium; Isospora; oocysts identification; laboratory methods.

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