04343
Parasites (Blastocystis hominis, Dientamoeba fragilis, Cryptosporidium spp., Cyclospora cayetanensis, Entamoeba histolytica, Giardia lamblia) laboratory diagnostic in Latvia 2019-2021

Late breakers

22. Clinical trials

Karlis Ventins [1], Oksana Savicka [2], Tatjana Bogurdovica [2], Sergejs Nikisins [2]

[1]Rīga Stradiņš University - Rīga (Latvia), [2]Riga East University hospital, Infectology Centre of Latvia - Rīga (Latvia)

Background

In humans, infection with an intestinal parasite can be asymptomatic, but some cases present with diarrhea and other signs of gastroenteritis. Molecular approaches are becoming increasingly available for detecting intestinal parasites, molecular methods demonstrate excellent sensitivity and specificity with respect to conventional methods such as microscopy.

Methods

In 2019 – 2021 891 samples were tested in NRL of Latvia to detect parasites DNA by Allplex GI-Parasites Assay, Seegene from stool samples. We compared *B.hominis*, *D.fragilis*, *Cryptosporidium* spp., *C. cayetanensis*, E. histolytica, *G. lamblia* DNA positive samples with microscopy.

Results

We obtained 308/891 (34.6%) positive parasites DNA. 141/308 (45.8%) *B.hominis* DNA was found; *D.fragilis* DNA - 91/308 (29.5%); *Cryptosporidium* spp DNA - 9/308 (2.9%); *G.lamblia* DNA - 2/308 (0.7%); *C. cayetanensis* DNA - 1/308 (0.3%); *E.histolytica* DNA - 0/308; *B.hominis* + *D.fragilis* DNA - 57/308 (18.5%); *B.hominis* + *Cryptosporidium* spp. DNA - 3/308 (1%); *Cryptosporidium* spp. + *D.fragilis* DNA - 2/308 (0.7%); *B.hominis* + *G.lamblia* DNA - 1/308 (0.3%); *D.fragilis* + *G.lamblia* DNA -1/308 (0.3%).

The analysis of data showed that 60/308 (19.5%) positive parasites DNA samples were tested by microscopy: *B.hominis* – 30/141 (16/30 positive microscopy, 14/30 negative microscopy); *D.fragilis* – 20/91 (19/91 negative microscopy and 1/91 *B.hominis* positive microscopy but *D.fragilis* negative; *Cryptosporidium* spp. – 2/9 (negative microscopy); *G.lamblia* - 1/2 (negative microscopy); *B.hominis* + *D.fragilis* – 6/57 (4/57 *B.hominis* positive microscopy, *D.fragilis* – negative; 2/57 negative

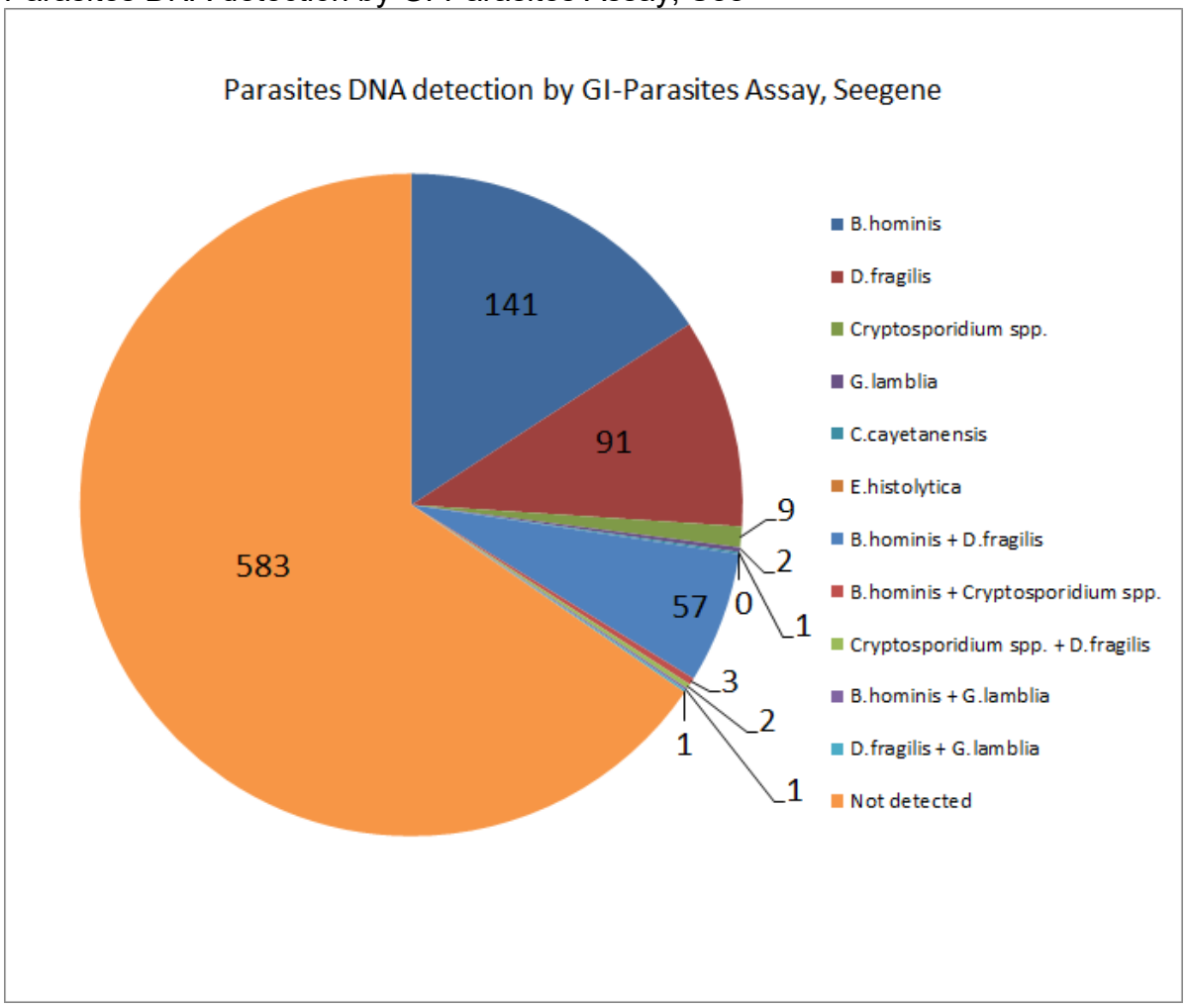
microscopy); *B.hominis* + *Cryptosporidium* spp. – 1/3 (B.hominis positive microscopy but Cryptosporidium spp. negative).

Further investigation of parasites DNA samples showed that 583/891 (65.4%) were negative by Multiplex PCR. 113/583 (19.4%) were tested by both methods: 108/583 (18.5%) were negative and 5/583 (0.9%) were positive by microscopy (4/5 - *B.hominis*, 1/5 - *E.histolytica*) but negative by PCR.

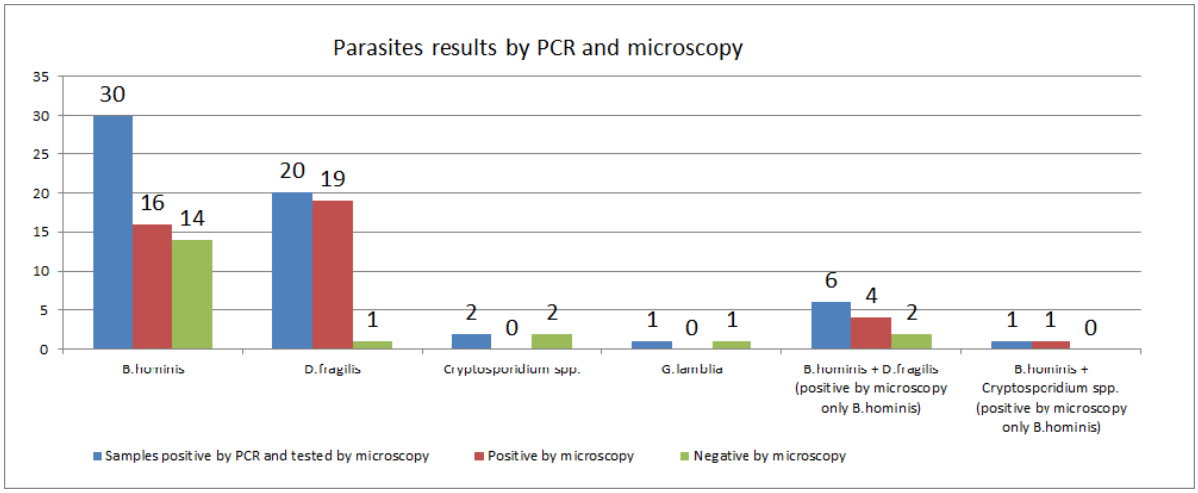
Conclusions

Developments of Multiplex PCR-based assays have the potential to overcome gastrointestinal tract parasite infections detection. From 308 positive parasite DNA results mostly are found B.hominis and D.fragilis. 19.5% samples were tested by PCR and microscopy: only 5.2% samples were positive by both methods, all B.hominis, 1.6% - partially coincided and 12.6% were negative by microscopy, however only 0,9% samples were negative by PCR but positive by microscopy.

Parasites DNA detection by GI-Parasites Assay, See



Parasites results by PCR and microscopy



Keyword 1
parasites
Keyword 2
microscopy
Keyword 3
polymerase chain reaction

Conflicts of interest

Do you have any conflicts of interest to declare?
I have no potential conflict of interest to report
Personal grants/research supports