

Session: P038 More on parasitic disease epidemiology and management

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**High prevalence of *Dientamoeba fragilis* and blastocystis in rural Nepal: pathogens to treat or residents of a healthy gut?**

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**Background:** *Dientamoeba fragilis* and *Blastocystis* have been described as non-pathogenic protists in human gut for decades. However, many case reports and other studies that piled up in early 2000s have indicated them as the causative agents of certain clinical manifestations, where their eradication is essential for effective treatment of patients. Recent screening studies using PCR indicated high prevalence rates for *Dientamoeba fragilis* (43% in Denmark) and *Blastocystis* (100% in Senegalese children); this surely aroused a question about their roles in human gut, whether they are pathogens that require eradication or residents of a healthy gut? Here, we present the outcomes of our assessments during the field studies in rural Nepal between 2013 and 2015 to contribute to this discussion.

**Material/methods:** Stool samples of 203 children aged between 2 and 15 were collected during site visits between 2013 and 2015 (85 in 2013; 29 in 2014 and 89 in 2015). Parasitological examinations included routine O&P examination, which was done on site in 2015 and in the research laboratory of Acibadem University in Istanbul, where stool samples were transported at 4°C in two vials, with and without fixative solution. *Dientamoeba fragilis* was sought using Real-Time PCR, applied as described previously (Verweij et al., 2007). Prevalence of *Blastocystis* was assessed only by O&P examinations due to both budget and staff limits. Kinyoun acid fast staining was also applied to identify coccidian parasites in stool.

**Results:** Routine O&P examinations showed *Blastocystis* was present in 58 (28.6%) of 203 children. Adequate DNA was extracted from the stool samples of 153 children and *D. fragilis* DNA was identified in 110 (71.9%). Other intestinal parasites identified during O&P examination and Kinyoun-stained smears include *Entamoeba histolytica/dispar* (n=38), *Giardia lamblia* (n=34) *Cryptosporidium* spp (n=24), *Cyclospora cayetanensis* (n=14) and *Hymenolepis nana* (n=3).

**Conclusions:** Children in developing countries, such as Nepal are under the threat of parasitic diseases that directly disturbs their physical and mental development. Therefore, large-scale public health measures are required to fight against parasitic diseases and improve the infrastructure and life standards in Nepal. At this point, unveiling the roles of *D. fragilis* and Blastocystis in human gut, identification of contributing factors associated with clinical disturbances in Blastocystis and *D. fragilis*-positive individuals, and assessments of interactions of both protists with other components of gut microbiota obviously deserves more attention. We plan to conduct PCR for Blastocystis to all DNA samples and include microbiota analyses to assess the relationships between the bacteria and eukaryotes in the gut.