

## ***Blastocystis* subtypes distribution in patients performing routine coproscopy tests at the Department of Tropical Medicine and Epidemiology (Medical University of Gdańsk)**

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*Blastocystis* is a common, enteric protist found in human stool samples, most likely transmitted by fecal-oral route. It has a worldwide distribution with higher prevalence in developing countries of low sanitary and hygiene conditions. Nine (ST1–ST9) out of 17 genetically diverse subtypes (STs) occur in humans with predominance of ST1–ST4, however in different order depending on the region of the world, and even within the same regions which suggests different parasite reservoirs or different routes of infection. Numerous publications show a wide range of symptoms in people with *Blastocystis* from acute watery diarrhea, through mild chronic abdominal discomfort to a lack of symptoms. A possible association between the presence of *Blastocystis* and irritable bowel syndrome (IBS) or irritable bowel disease (IBD) is under ongoing debate. Skin symptoms and urticaria receding after eradication of the parasite were also described. On the other hand, many people with *Blastocystis* have no symptoms of disease, therefore no consensus has been reached on the *Blastocystis* role in human disease.

In Poland the problem of human blastocystosis is often unknown or underestimated by physicians. There is still little known on the epidemiology and subtypes of *Blastocystis* occurring among the inhabitants of Poland.

The main objective was to determine *Blastocystis* subtypes (STs) in patients attending in the years 2012–2013 to the Department of Tropical Medicine and Epidemiology GUM for faeces testing for the detection of parasites. Additionally, we tried to evaluate the relationship of different STs with the presence of gastrointestinal complaints. The group consisted of 122 people including 34 women and 88 men, with and without gastrointestinal complaints, ages 20 to 80 years; 30 of them never left Poland and 92 returned from the hot climate zone in a short time before taking part in the study.

*Blastocystis* STs were identified in stool culture isolates using polymerase chain reaction (PCR) with seven pairs of the subtype-specific, sequence-tagged-site (STS) primers (SB83, SB155, SB227, SB332, SB340, SB336, and SB337).

Five *Blastocystis* STs were identified in the following order: ST3, ST2, ST1, ST6, ST7 and two mixed ST1/ST3 cases. ST3 was predominant in both groups (travellers and people not leaving Poland). ST1 was found exclusively and ST2 more frequently in travellers than those who never left Poland. ST4, which is common in Europe, was not found. There was no correlation between gastrointestinal disorders and *Blastocystis* STs.

CONCLUSION. Our study sheds more light on the distribution of *Blastocystis* STs among the inhabitants of Poland. The results suggest that some STs could have been imported due to travels outside of Poland, and indicates that the transmission of the parasite requires further research. The results also show that the clinical outcome of blastocystosis is not likely associated with a specific STs.