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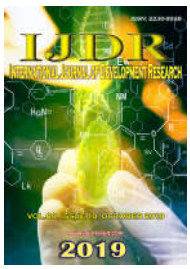

RESEARCH ARTICLE OPEN ACCESS

FIRST REPORTS FROM URBANORUM SPP, MEETING IN SUS PATIENT FLOES IN A PRIVATE IMPERATRIZ LABORATORY DURING 2018

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ABSTRACT

Enteroparasites comprise a species of organisms that affect the gastrointestinal tract of humans and depending on the degree of pathogenicity may lead to the death of the infected individual. In addition to the most frequent intestinal parasites found in Brazil, there are now reports of the appearance of Urbanorum spp., A new parasite discovered by researcher Francisco Tirado Santamaria, parasitologist at the Universidad Industrial de Santander - Colombia. This parasite is beginning to be reported in the literature by researchers from Brazil. Therefore, this research was proposed to investigate if infection occurs in Urbanorum spp. in the city of Imperatriz - Ma. The research took place from 01/01/2018 to 12/31/2018, the stool samples analyzed were from SUS patients who were performing routine examinations in a private laboratory convened to the SUS of the Municipality. Of Imperatriz, being a total of 5428 parasitological exams performed in the referred laboratory in the studied period, and from this total 25 positive samples were found for Urbanorum spp. thus demonstrating that the parasite is already in the region and these are the first reports of this new parasite in the city of Imperatriz - MA.

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INTRODUCTION

The protozoa and helminths also known as enteroparasites, understand as species of organisms that affect the gastrointestinal tract of humans and other animals, they can cause parasitic diseases that lead to malnutrition, diarrhea, anemia, retardation in children's physical and cognitive development, and depending on the degree of pathogenicity, they can even cause death of the infected (Gil *et al.,* 2013). According to G / Hiwot et al. (2014), there are an estimated 3.5 billion people infected with intestinal parasites in the world, living mainly in underdeveloped countries, where sanitation is poor and socioeconomic levels are low. Among the parasitic species, those with the highest frequency in the population are: Ascaris lumbricoides, Trichuristrichiura and hookworms. In a recent study published by Catedra Libre, researcher Francisco Tirado Santamaria, a parasitologist at the Universidad Industrial de Santander - Colombia, had been studying patient samples at the Barracambemeja health center since the 1990s, where he found rounded structures between 80 and 100. µ of diameters stained with lugol a pale yellow color and a double membrane with pores through which pseudopod-like hyaline structures emerged from it. What was initially thought to be fat deposits, after more than 10 years of research done by the researcher, the structure found by him was described as a new microorganism, a protozoan similar to amoebas whose reproduction is done by binary division and belongs to Cycloposthidae family, where the researcher named it as Urbanorum spp, (Santamaría, 2019). The main symptoms of patients presenting with the parasite are watery diarrhea whose samples are liquid, with acidic pH, without mucus, blood or leukocytes. Patients also present with early colic pain in the lower right hypochondrium, suggesting that the process of infection occurs at the colon level (Santamaría, 2019). The transmission of Urbanorumspp.occurs similarly to other intestinal parasites, through water, food and direct contact with feces contaminated by it, the treatment of infected patients, are the same used in the treatment of amoebiasis using medicines such as metronizadole and secnidazole (Silva, 2017 and Botero and Restrepo, 2012). In addition to Colombia, reports of this

parasite are already being cited in countries such as Peru, Ecuador, and now also in Brazil (Prado *et al.,* 2018). The first case reported in Brazil about urbanorum spp. Infection also occurred in the state of Maranhão, in a 41-year-old female patient in the city of Buriti in October 2017 (De Aguiar *et al.,* 2018). In Brazil, the most common protozoa are Entamoeba coli, Entamoeba histolytica, Endolimax nana and Giardia lamblia. And among the helminths, the most common are Ascaris lumbricoides, Trichuristrichiura and Ancylotoma spp. (Yihenew *et al.,* 2014). However, after the first case of Urbanorum spp. Reported in Brazil, new cases are already being published about this parasite, which emphasizes the need for improved studies about it, serving as support for clinical analysts throughout the country, thus avoiding diagnoses of this protozoan go unnoticed, soon it could become a public health problem if not properly reported. Based on what has been exposed here, the present study aimed to investigate the prevalence of the parasite Urbanorum spp. found in samples of patients treated by SUS in a private laboratory in the city of Imperatriz - Maranhão, during 2018. The present work aimed to report the findings of the parasite Urbanorum spp. found during the year 2018 in SUS patient samples analyzed in a private laboratory associated to the SUS of the city of Imperatriz - Ma.

MATERIALS AND METHODS

The results were obtained from 01/01/2018 to 31/12/2018, where all samples that tested positive for Urbanorum spp. They were separated by the laboratory and stored under refrigeration at 5 ° C and defrosting temperature 25 ° C, according to the protocol for conservation of biological samples of the National Health Surveillance Agency (Dos Santos and Junior, 2018) to be visualized again and confirmed by the laboratory staff.

The age and gender of the patients without identification of name and personal data were also obtained. The stool samples obtained were processed according to the Hoffman, Pons and Janer (HPJ) or Lutz protocol, an easy, simple method and a low cost parasitological technique (Neves et al., 2000). This method uses spontaneous sedimentation of a homogeneous faecal sample filtrate and water as the homogenization solution. For the most reliable result, the samples were stained with Lugol and examined under optical microscopy using 10 × and 40 × objectives. The results were confirmed following the references about the parasite life cycle and its morphological characteristics. The samples analyzed contained a round-shaped structure between 40 and 100 µ in diameter and several pseudopod-like filaments (Figure 1). The staining process using Lugol's solution is commonly used in concentration and techniques for detection of intestinal protozoa. Thus, it was possible to confirm that the microorganism was the parasite known as Urbanorum spp. First identified in the 1990s by the parasitologist. and researcher Francisco Tirado Santamaria. Figure 1 - Urbanorum spp. stained with Lugol, highlighting its shape, light yellow color and morphology under light microscopy. Image A - 10X view, Image B - 40X view

RESULTS AND DISCUSSION

During the period from 01/01/2018 to 12/31/2018, a total of 5428 parasitological exams were performed by the SUS in the laboratory from which the samples were analyzed. From this total 25 positive samples were found for the parasite Urbanorum spp. The individuals with parasite infection were between 28 and 77 years old, being only 2 males and 23 females, the samples taken by them to the laboratory were watery, being one of the characteristics of the parasite infection, not It was possible to obtain more patient data such as food, travel abroad and basic sanitation information due to insufficient data presented by them at the time of registration in the laboratory such as lack of address and contact phone. Despite the discovery of Urbanorum spp. Although scientifically recent, data on the literature is somewhat limited, but studies have shown the occurrence of this parasite over the years mainly in South America in countries with similar environmental conditions to Brazil, including Colombia. , Peru and Ecuador (Díaz and Perlaza, 2019; Villafuerte *et al.,* 2016 and Rivadeneira, 2017, Lopez and Nunes, 2018).

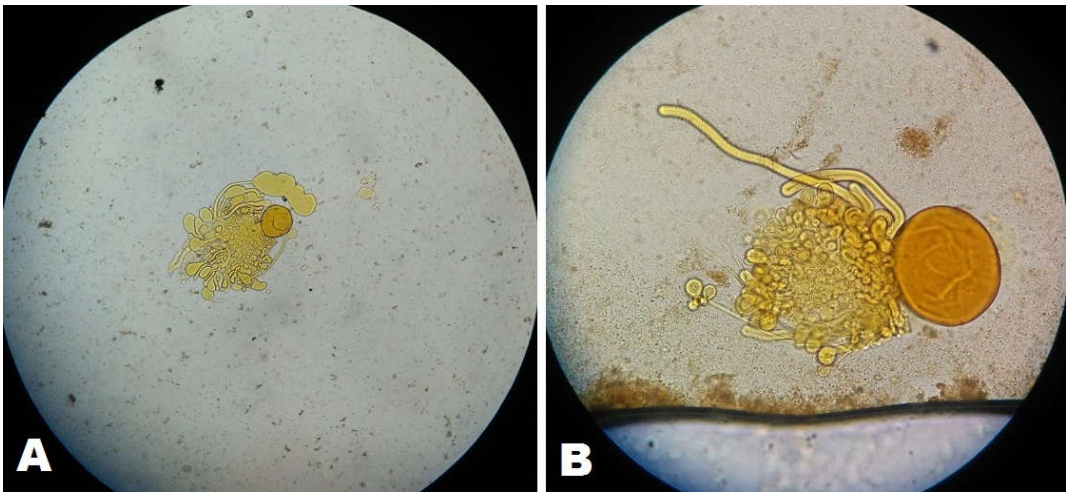

Figure 1 . Urbanorum spp. stained with Lugol, highlighting its shape, light yellow color and morphology under light microscopy. Image A - 10X view, Image B - 40X view

Our data are in line with data from De Aguiar (2018) who reports the first case of Urbanorum spp. in Brazil, more specifically in Buriti in Maranhão, thus demonstrating that the introduction of this protozoan in Brazil is something recent and that the state of maranhão already points to being the state with several cases of this parasite. A second reported case of Urbanorum spp. in Brazil was in Santana do Livramento, Rio Grande do Sul in a 72 yearold patient. The patient denied having traveled in the last 12 months, which suggests that the contamination is indigenous (Rivadeneira, 2017, Lopez and

Nunes, 2018). A study by Morales Del Pino (Del Pino, 2019) in Cajamarca, Peru showed that 20.8% of children between 3 and 14 years old had Urbanorumspp from a total of 96 children analyzed in primary and secondary schools in that municipality. health, environmental, economic and socio-cultural conditions, which showed that these factors are directly linked to cases of parasitism in the community. Back in Brazil, a survey conducted in São Paulo in 2018 with 5786 stool samples showed that 80 samples analyzed were positive for Urbanorum spp. (Leão *et al.,* 2019) .What further corroborates our research and demonstrates that the parasite is already spread throughout the national territory. The samples analyzed in our research were stored for future molecular characterization study, since further studies on this potential parasite, especially with its due molecular and taxonomic characterization, are more than necessary due to the frequency of samples highly suggestive found.

Conclusion

Parasitic infection in Brazil by Urbanorum spp. It is therefore a potential driver for research and monitoring of this protozoan in the country. Our research aims to help as a source of information for future suspicion of infected patients and possible diagnostic suspicion in cases with suspected clinical picture of parasitosis, so the structures found during the research show that it is the protozoan Urbanorum spp. With this we understand that the data obtained here are in line with data from other research in the country, which causes a situation that deserves attention of municipal, state and federal health agencies.

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