EVALUATION OF THE MEDICAL INTERN'S KNOWLEDGE OF VISCERAL LEISHMANIASIS

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ABSTRACT

Leishmaniasis belongs to a group of diseases that are still considered public health problems in many countries, this is due to the high global mortality, still very present in the main epidemiological indicators. In Brazil, it is caused by the protozoan Leishmania infantum chagasi and transmitted by sandflies, with the dog being considered the main source of infection in the urban environment, and man the accidental host. It is a serious disease with few therapeutic options and, even when properly treated, has a lethality of about 5%. The state of Mato Grosso do Sul and the city of Campo Grande have suffered, in recent years, environmental changes that may have contributed to the spread of the vector, such as the construction of a gas pipeline, the destruction of areas of the cerrado, as well as the opening of avenues following the watercourses and the felling of vegetation for the construction of popular houses. In view of these changes in the city and the proportion that Visceral Leishmaniasis is gaining, this study sought to understand the knowledge of medical students, in the internship stage, in the city of Campo Grande – MS. This is a quantitative, descriptive cross-sectional study. The sample was by convenience, and 100% of the students were approached during the sessions. The results point to regular knowledge of the students in the internship modality. It is expected that the student reflects on his knowledge about this disease, considering the importance of epidemiology for assertive conduct.

Keywords: Visceral leishmaniasis. Primary care. Collective health. Medicine. Knowledge.

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INTRODUCTION

The initial description of the VL parasite was made in India by William Boog Leishman, however, this was confused with Trypanosoma. Indian doctors in the small town of Dum-Dum (India), hence "dum-dum" fever, used the Sanic term "kala azar" (black disease) to name a severe and fatal disease that they believed to be caused by trypanosomes (WHO, 2011).

Also according to WHO (2011), in 1908, in Tunisia, amastigote forms were identified in domestic canids, demonstrating that they were also the intermediate hosts. It was only in 1914, in India, that it was proven that the areas of incidence of the disease coincided with the areas of concentration of sandflies.

In South America, the first case of human VL was reported by Migone, in 1913, in Paraguay, in a patient who had contracted the disease in the state of Mato Grosso. Between 1936 and 1939, Evandro Chagas carried out studies in Brazil that confirmed that the disease attacks both humans and dogs, and the sandfly Lutzomyia longipalpis was identified as a probable vector (Alencar, 1977).

Studies on the transmission cycle of the disease in Brazil were undertaken primarily in Ceará, culminating in the incrimination of the fox Lycalopex vetulus as the main wild reservoir and, once again, confirming the dog as the most significant domestic host. This is due to the habit of these animals adapting normally to the coexistence of men, thus being able to promote the connection between the wild and domestic cycles of VL (Gontijo and Melo, 2004).

It is estimated that the annual incidence is 500 thousand new cases of visceral leishmaniasis. The average prevalence is about 15 million cases in the world and that approximately 90% of the cases occur in India, Bangladesh, Nepal, Sudan and Brazil, affecting mostly the poor population of these countries (Lindoso and Goto, 2006).

In the Americas, native cases are recorded in Argentina, Bolivia, Colombia, El Salvador, Guatemala, Honduras, Mexico, Paraguay, Venezuela and Brazil, which accounts for 90% of the cases that occur on the continent (Miranda-Sa, 2006).

In Brazil, VL is distributed throughout the Northeast (Maranhão, Bahia and Ceará), Southeast (Minas Gerais, Espírito Santo and São Paulo) and Midwest (Goiás, Mato Grosso and Mato Grosso do Sul) (Lainson and Rangel, 2005).

The profound environmental transformations that have occurred in recent decades, together with socioeconomic factors that have promoted the migration of the rural population to urban centers, have contributed to the occurrence of VL urban cycles, increasing the number of cases (França-Silva et al., 2005). Urbanization is a new element

and little is known about the epidemiology of VL in these foci, recent studies are focusing on the relationship between the components of the transmission chain in the urban cycle, which is more complex and varied than in the rural one (Gontijo and Melo, 2004).

In Brazil, the transmission of Leishmania sp. It takes place in two ways: the vector and a vertebrate host. The vector is represented by dipteran insects, known as sandflies, with Lutzomyia longipapipis as its main representative, although more recently in the State of Mato Grosso do Sul a new vector has been observed, Lutzomyia cruzi (Gontijo and Melo, 2004; Monteiro et al., 2005).

The vertebrate host is represented by wild animals (opossums, primates, rodents, canids); domestic animals (dog, cat, horse) and man (Rey, 2008).

The clinical manifestations of the disease in dogs and humans are similar and present nonspecific signs, such as irregular fever for long periods, anemia, progressive weight loss, apathy and cachexia in its final stage (Feitosa, 2006).

Kala-azar is a generalized and chronic infectious disease. Fever is the most notable symptom, due to its constancy, being of the regular or remitting type. In many cases, the fever curve shows a double daily rise. But there are also subfebrile cases or cases with hyperthermia (40 - 41°C), accompanied by a rapid pulse, pallor and asthenia (Rey, 2008).

Splenomegaly is the second most important manifestation. The volume of the spleen increases relatively quickly, both in children and adults, and can exceed the umbilical scar. Its consistency is hard and, even though it is painless to palpation, it causes a sensation of dull pain due to the distension of its capsule. The enlargement of the liver is usually on a smaller scale than that of the spleen. There is almost always a micropolyadenia. As the disease progresses, anemia is accentuated and there is a marked tendency to hemorrhages. The disease may evolve rapidly, leading the patient to cachexia and death within a few weeks or a few months, or take on a chronic course. The outcome often comes from intercurrent diseases in the body whose immune mechanisms are already definitively compromised (Rey, 2008).

Dermatological changes (alopecia, furfuraceous skin desquamation, seborrheic dermatitis, periorbital pyoderma, nodules that may or may not ulcerate, onychogryphosis), renal failure, gastrointestinal changes such as bloody diarrhea, ophthalmologic changes such as uveitis and glaucoma, and neurological changes such as tetraparesis, seizures, myoclonus, walking in circles, nystagmus, intention tremor, strabismus, jaw paralysis, and lip ptosis are frequent signs (IKeda et al., 2003; Feitosa, 2006).

Dogs also present a wide spectrum of clinical signs, from apparently healthy animals, through oligosymptomatic, to severe stages of the disease (Costa et al., 1999).

The canine clinical picture is characterized by lymphadenomegaly, irregular fever for long periods, anemia, conjunctivitis, progressive weight loss, and cachexia in its final stage. Dermatological changes are frequent and include hair loss, ulcerative lesions, intense itching, opaque skin and seborrheic dermatitis. In some cases, onychogryphosis (abnormal nail growth) is also observed associated with the presence of the parasite stimulating the nail matrix (Feitosa et al., 2000).

Diagnostic suspicion of VL should be based on epidemiological data and clinical and laboratory findings. However, the diagnosis of certainty can only be established through the direct microscopic identification of the parasites in smears obtained by puncture of lymph nodes, spleen and bone marrow, and the cultivation of this material can be used in different culture media to isolate the parasites (Neves, 2003).

THE state of Mato Grosso do Sul is geographically projected in a strategic region for the development of several diseases such as dengue and visceral leishmaniasis. Campo Grande, the capital of this state, suffers intense urbanization and expansion, generating a series of notifications about these pathologies.

Most of the studies related to this theme encompass clinical and diagnostic aspects. However, it is known that early diagnosis and appropriate and timely intervention reduce the chances of worsening this disease.

In view of the current situation of notifications and the intense academic training of physicians, it is important to evaluate the knowledge that these future professionals have about the subject and, thus, provide reflection and corrections based on the findings, contributing in the short and medium term to the formation of this public, as well as, in the long term, to SUS users.

METHODOLOGY

This is a quantitative, descriptive, cross-sectional and epidemiological study. The study was carried out in a private university in the municipality of Campo Grande, which is the capital of Mato Grosso do Sul, with an area of 8,096km², representing 2.26% of the total region of the state, its population is estimated at 766,461 inhabitants.

With the objective of organizing the care network of the municipal health system and ensuring the quality and access of the population to medium and high complexity primary care services, the Municipal Department of Public Health works in a regionalized way, having its territorial area divided according to the aforementioned land division.

Each of these has its own managerial headquarters and is responsible for monitoring and monitoring the health care performance of the units of its own network, in its area of coverage.

100% of the students who study Medicine, in the internship phase, were approached during the clinical discussions. Those on maternity leave and medical certificates were excluded.

Data collection occurred through a questionnaire via *google forms*, with a unified password for the corresponding collection period, prepared by the authors themselves, according to the base literature. The questionnaire was applied by signing the Informed Consent Form (ICF), via *google forms*.

Medical students in the internship phase (9th, 10th, 11th and/or 12th semester) of the aforementioned undergraduate course were surveyed, during the clinical sessions, which take place every Friday. In each clinical discussion, after authorization from the course coordination, the researcher entered the classroom, explaining the importance of the research. He sent the link to the research to the professor coordinating the clinical discussion, who forwarded it to the students at the exact moment and, those who agreed, filled out the questionnaire. The sample was for convenience, excluding those on maternity leave, medical certificate and who refused to sign the Informed Consent Form. Data collection took place individually, via *google forms*. The variables were: etiology, physiology, pathophysiology, epidemiology, clinical picture, diagnosis, differential diagnosis, and management. The methodology implemented by Andrade et al. (2008) was defined as a criterion to classify knowledge as the following concepts:

Insufficient: up to 24% of correct answers;

Regular: 25% to 49% of correct answers;

Good: 50% to 74% of correct answers; and

Great: 75% to 100% correct answers.

The research project was submitted to the coordination of the mentioned course, to the Ethics and Research Committee of Uniderp University, registered under CAAE number: 76992523.3.0000.0199, and opinion No. 6.737.229.

RESULTS

The results listed on the etiology, the 11th semester showed regular knowledge (37%), as well as the 9th semester (46, 12%) and the 12th semester (47.58%). The 10th semester showed good knowledge with 59.82% of correct answers;

Regarding physiology, all semesters presented regular knowledge, considering the 11th, 9th and 12th semesters with 27.16; 29.62% and 39.3%, respectively. While the 10th semester showed 49.1% of learning about this variable;

Regarding the pathophysiology, all semesters presented regular knowledge, considering the 11th, 9th and 12th semesters with 27.18%, 33.8% and 34.78%, respectively. While the 10th semester showed 43.64% of learning about this variable;

With regard to epidemiology, the 10th semester stands out with good knowledge (55.44%) and the others, remains classified as regular;

In the clinical variables, the following measurements are as follows: 11th semester presents regular knowledge about the clinical picture (37.36%), insufficient knowledge about diagnosis (24%), regular knowledge about differential diagnosis (41.14%), as well as treatment (33.96%) and management (41.88%); the 12th semester presents regular knowledge about the clinical picture (42.76%), as well as for diagnosis (35.84%), differential diagnosis (49.66%) and treatment (48.96%). However, the conduct had 65.54% of correct answers, being considered good; the 10th semester presents regular knowledge about the clinical picture (45.47%), as well as diagnosis (29.18%), differential diagnosis (46.28%). While treatment (57.28%) and conduct (73.64%) are considered good; the 9th semester presents regular knowledge about the clinical picture (37.82%), as well as differential diagnosis (34.36%), treatment (44.32%) and management (48.68%). For diagnosis (22.16%), it is considered insufficient.

In the global context, the 11th semester presented regular knowledge, with 33.66% of correct answers, as well as the 9th semester (37.68%) and the 12th semester (44.44%). The knowledge was attributed as good, in the 10th semester, as it obtained 51.09% of correct answers.

DISCUSSION

The improvement of VL control strategies has been carried out based on evidence found in the scientific literature and correcting operational flaws such as the lack of standardization of diagnostic methods for human and canine infection; the disagreement between studies that evaluate the impact of eliminating seropositive dogs on the prevalence of human infection; the demonstration that other reservoirs may be a source of L. *chagasi* infection, such as wild canids and marsupials; and the scarcity of studies on the impact of control actions directed against vectors (Gontijo and Melo, 2004), which is directly related to the urbanization process.

However, the control of this problem is not limited to technical knowledge, only the organization of the team's work process needs to be based on knowledge about the population's health problems, risk areas, social equipment, epidemiological situation, and other aspects related to the determinants and conditions of the health and disease process, in addition to comprehensive care, that actually meets the needs of the population, and this depends on the mastery that the team has over the territory and its peculiarities (Neta and Vasconcelos, 2020), including the medical professional.

The physician will be all the more useful the greater his knowledge about diseases as a whole (etiology, pathophysiology, pathogenesis, clinical manifestations, diagnosis, treatment and prognosis). If its culture covers a large number of diseases, it will be more competent and accurate in the clinical cases under its responsibility (Teixeira and Dantas, 1997).

The same authors also describe that the physician's perception of the disease is not homogeneous - and this depends in part on his professional training. If it is purely organicist, it will be able to recognize the disease from the concrete analysis of the data at its disposal. If he does not recognize it immediately, he will continue the investigation for a variable time, requesting complementary tests or opinions from other doctors, until a diagnosis compatible with the clinical condition in question emerges and that is - or will be - known to him (therefore, medical culture is fundamental).

The extreme specialization of the professionals who deal with these tropical diseases seems to have as a counterpart, with rare exceptions, an inability to perceive the problem holistically, as did the multivalent generation of Samuel Pessoa, Leônidas Deane and Joaquim Alencar, much more sensitive to the social and environmental determinants of leishmaniasis and other endemic diseases. And this is because disease is also a cultural event that depends on categories of thought and verbal constructs specific to a generation, which reflect the history of the medical field and the society that encompasses it (Benchimol et al, 2019).

The transformative debate can and should include all the actors involved in the problem, with strong participation of organized civil society and still that not represented by the traditional organizations that deal with the subject, to improve the panorama of acceptability and feasibility of any action that may be proposed. In this sense, it will be a priority to harmoniously value the practice of public health based on scientific evidence, which takes into account the participation of the affected communities in a constructive process of horizontalization of relationships, which allows progress in the construction of an increasingly participatory, plural and effective health system (Romero, 2016), in this sense,

cognitive knowledge, that sustains clinical practice, should be reinforced in undergraduate studies, collaborating with the reduction of underreporting and the expansion of the understanding of the dynamics of the disease.

In the latest National Curriculum Guideline for Medical Courses (2014), among the competencies and skills to be developed during graduation, health care highlights that such a professional must master basic scientific knowledge of the biopsychosocio-environmental nature and have critical reasoning in the interpretation of data, in the identification of the nature of problems and their resolution, in addition to correctly diagnosing and treating the main diseases of the human being in all phases of the cycle biological criteria, having as criteria the prevalence and morbid potential of diseases, as well as the efficacy of medical action, with generalist, humanistic, critical and reflective training. This professional must be able to act, based on ethical principles, in the health-disease process at its different levels of care.

CONCLUSIONS

It is concluded that there is a need to promote content that supports clinical-epidemiological diagnoses, since in Brazil, several municipalities have difficulties in responding quickly to laboratory tests. Clinical diagnosis is only possible through sanitary practice, adequate epidemiological investigation, situational diagnosis (as it contributes to the understanding of local endemicity) and symptomatological knowledge.

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