

Parasitosis Diagnosed in the Infectious Diseases Department of the Yalgado Ouédraogo University Hospital from 2010 to 2022: Epidemiological, Clinical and Evolutionary Aspects

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Abstract

Introduction: Parasitic diseases remain a public health problem in Burkina Faso, as they are in other developing countries. **Objective:** To describe the epidemiological, clinical and evolutionary characteristics of parasitosis diagnosed in the infectious diseases department of the Yalgado Ouédraogo University Hospital. **Patients and Method:** This is a descriptive cross-sectional study with retrospective data collection during the period from January 1, 2010 to August 31, 2022. **Results:** From January 1, 2010 to August 31, 2022, a total of 2829 patients were admitted to the infectious diseases department of the Yalgado Ouédraogo University Hospital in Ouagadougou. Among them, 624 patients suffered from parasitic pathologies, representing a hospital prevalence of 22%. The patients were predominantly male with a sex ratio of 1.1. The average age was 34 years \pm 11. Most patients (74.7%) lived in the capital city of Ouagadougou. Ten percent (10%) of the patients with parasitosis were infected with HIV (PLHIV). Out of a total of 624 cases of parasitosis, protozoosis represented 97%, of which 80% were malaria cases. Clinical signs were dominated by neurological signs, digestive signs and dehydration. Comorbidities were dominated by HIV infection, tuberculosis and digestive candidiasis. Under treatment, the evolution was marked by a lethality of 10%. **Conclusion:** Protozoosis were the most frequently diagnosed. They were dominated by malaria and opportunistic parasitosis during AIDS. These results argue for a revitalization of voluntary HIV testing and careful management of PLHIV.

Keywords

Parasitosis, Protozoosis, Helminthosis, HIV/AIDS

1. Introduction

Parasitic diseases are widespread in the world with a higher prevalence in developing countries. They are a serious public health problem in tropical countries where poor sanitation and the still high prevalence of HIV/AIDS favor their outbreak. In many tropical regions, they remain a frequent cause of morbidity, disability and mortality. Indeed, on a global scale, WHO estimates that there will be 241 million new cases and 627,000 deaths related to malaria in 2020 [1], more than one and a half billion people are infested by geo-helminths and more than 600 million people are infested by *S. stercoralis* [2] [3] [4], resulting in poor nutrition, anemia, and growth and psychomotor development problems in children [5].

In Burkina Faso, as in most developing countries, hydro-agricultural schemes are an alternative for food self-sufficiency due to a lack of rainfall. While these water schemes are indispensable, they constitute an ideal habitat for intermediate hosts of parasitic diseases such as malaria and bilharzia. Studies in parasitic pathology in Burkina Faso have focused on intestinal parasitosis and malaria [6]. The objective of this study is to describe the epidemiological, clinical and evolutionary characteristics of parasitoses diagnosed in the infectious diseases department of the CHU-YO of Ouagadougou.

2. Patients and Method

This is a descriptive cross-sectional study with retrospective data collection during the period from January 1, 2010 to August 31, 2022. The study took place in the infectious diseases department of the Yalgado Ouédraogo University Hospital.

The study involved all patients who were hospitalized and followed in the infectious diseases department of the Yalgado Ouédraogo University Hospital during the study period. All patients hospitalized and followed up in the infectious diseases and tropical diseases department of the CHU-YO in whom the diagnosis of parasitosis was made on the basis of epidemiological, clinical and paraclinical arguments were included. All patients whose clinical records were not usable were excluded. Data were collected using a collection form; socio-demographic variables (age, sex, residence, and profession), clinical data (functional signs, general signs, and physical signs), therapeutic data, and evolutionary data were collected from hospitalization records.

The data were entered into a computer using Word and Excel and were analyzed using Epi info software version 7.2. The Chi-square test was used for statistical analysis. A p value of less than 0.05 was considered significant.

3. Results

From January 1, 2010 to August 31, 2022, a total of 2,829 patients were admitted to the infectious diseases department of the Yalgado Ouédraogo University Hospital in Ouagadougou. Among them, 624 patients suffered from parasitic pa-

pathologies, representing a hospital prevalence of 22%. **Table 1** presents the patients according to socio-demographic characteristics.

Clinically, ten percent (10%) of the patients with parasitosis were infected with HIV. Out of a total of 624 cases of parasitosis, protozoosis represented 97% of which 80% were malaria cases. Parasitic pathologies were represented by malaria (483 cases of which 78% were severe forms), isosporosis (29 cases), cerebral toxoplasmosis (32 cases), cryptosporidiosis (19 cases), amoebiasis (18 cases of which 3 were hepatic), giardiasis (14 cases) and intestinal trichomoniasis (10 cases), lymphatic filariasis (9 cases), trypanosomiasis (7 cases), cerebral cysticercosis (7 cases), hymenolepiasis (6 cases), hookworm disease (6 cases) and distomatosis (6 cases). Clinical signs were dominated by neurological signs (headache, consciousness disorder, motor deficit), digestive signs (abdominal pain, diarrhea, vomiting) and dehydration. Comorbidities were dominated by HIV infection, tuberculosis and digestive candidiasis. The reasons for consultation and the clinical signs of the patients are presented in **Table 2** and **Table 3**. Under treatment, the evolution was marked by a lethality of 10%.

Table 1. Socio-demographic characteristics of patients.

		Numbers	Percentage
sex	Male	314	50.3%
	Female	310	49.7%
Middle age	34 years \pm 11		
Origin	Province of Kadiogo	466	74.7%
	Other Provinces	158	25.3%
Professions	Housewives	178	28.5%
	Pupils/students	160	25.7%
	Farmers	119	19%
	Traders	72	11.5%
	Public servants	24	3.9%
	Others	71	11.4%

Table 2. Distribution of patients according to reasons for consultation.

Reasons for consultation	Number	Percentage
Fever	85	13.2
Headaches	166	25.8
Dyspnea	84	13
Diarrhea	43	6.7
Vomiting	40	6.3
Diffuse pain	43	6.7
Abdominal pain	89	13.8
Alteration of the general condition	93	14.5
Total	643	100

Table 3. Distribution of patients according to clinical signs.

Signs	Number	Percentage
Severe dehydration	112	17
Disorder of consciousness	169	26
Anemia	103	16
Motor deficit	113	17.4
Cachexia	90	14
Agitation	63	9.6
Total	650	100

The reasons for consultation were dominated by headache, altered general condition, abdominal pain and fever.

The clinical signs were dominated by consciousness disorders, motor deficit, dehydration and clinical anemia.

Under treatment, the evolution was marked by a lethality of 10%. The majority of patients (96.5%) had received antiparasitic treatment. The poor prognostic factor was immunosuppression related to HIV infection (92.31% of deaths occurred in HIV-infected patients).

4. Discussion

The small size of our sample is explained by the fact that the infectious diseases department of the Yalgado Ouédraogo University Hospital is not the only department responsible for the management of parasitosis. Indeed, children frequently affected by malaria are treated in the pediatric department. Malaria remains the first parasitosis diagnosed in health facilities in Burkina Faso. In adulthood, we observe a decrease in the prevalence of parasitosis in general and malaria in particular. The acquisition of immunity over time, a better awareness of hygiene rules, and improved health care could partly explain this observation [7]. Thus, the malaria cases received in the infectious diseases department are cases observed in adults with a high frequency of severe forms and cases of morbid co-infections. But in adulthood the risk of digestive coccidiosis and toxoplasmosis is increased in patients immunocompromised by HIV. In our study, 3.48% of parasitosis were due to helminths. This rate is lower compared to the study of Shrestha *et al.* in Nepal [5]. The reason for the low prevalence of helminths is related to the mass treatment initiated by the National Program for the Elimination of Lymphatic Filariasis (PNEFL) and the National Program for Schistosomiasis Control (PNLSc) using Albendazole + Ivermectin and Praziquantel + Albendazole combinations respectively, which are effective against helminths [6] [8]. The predominance of protozoosis noted in our study corroborates the results of several studies in Africa and elsewhere [6]-[12]. Malaria was the most common protozoan disease diagnosed. Although preventable and treatable, malaria continues to have devastating health consequences, particu-

larly for children. For this reason, WHO recommends the RTS'S/AS01 malaria vaccine for this vulnerable group [1]. The majority of deaths have occurred in HIV co-infected patients. Indeed, HIV infection is a cause of immunosuppression which favors the occurrence of opportunistic parasitic infections [13].

5. Conclusion

The results of this study call for vector control actions against malaria, the fight against fecal peril and the establishment of drinking water distribution networks. This study also allowed us to observe a recrudescence of opportunistic parasitosis during HIV/AIDS such as toxoplasmosis, isosporosis and cryptosporidiosis. These results argue for a revitalization of voluntary HIV testing and careful management of PLHIV. Protozoa were the most frequently diagnosed diseases. They were dominated by malaria and opportunistic parasitosis during AIDS. Helminthic diseases were rarely diagnosed in the infectious disease department. It is important to improve sanitation and to follow up on antiparasitic distribution campaigns in our countries in order to effectively control these parasitoses. A multi-center study is needed to better assess the extent of parasitosis throughout Burkina Faso.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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