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Extended Abstract
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Infectious Disease Conf 2019: Clinical and epidemiological aspects of visceral leishmaniasis in Al Gadarif teaching hospital November2018 - Nada Asaad Abdelmajid Mohmed, Medical student , University of Khartoum

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Background
Visceral leishmaniasis (VL) or kala-azar is a systematic parasitic infection caused by two leishmanial species, L. donovani or L. infantum/ chagasi. The infection is transmitted by the bite of infected sand fly Phlebotomus argentipes. L. infantum/ chagasi infects mostly children and immunosupressed individuals(1).

Methods

This was a cross sectional, hospital-based study conducted from 20th of October to 25th of December 2018 to describe the clinical and epidemiological features of visceral leishmaniasis among patients admitted at AlGadarif teaching hospital.

Results:

100 patients were included in the study. Age ranged from 1 year to 79 years. 40% were children , 38 % adult male , 27% adult females and 20% came from Om bielel . 57% were served with well water . Average number of latrines in 53%are zero . 62% illiterate . with average monthly income 1.500SDG . 42% use ITNs with 76% vary in sleeping habit . Clinical presentation included splenomegaly (77%), fever (96%) . Regarding children pallor in 67% and in adults splenomegaly in 93% .60% misdiagnosed and mistreated as Malaria and Typhoid. The mean values for laboratory variables were: hemoglobin 59%, leukocyte count 2500/mm³, and platelet count 135000 mm³.with lowest platelets record about 15000 Mainly the diagnosis through Serology in 47%The first line treatment used in 58% of the cases was combination of SSG and Parmomycin . Ambisome was used in 41%.

Conclusions

While there is an advance in prevention and management of visceral leishmaniasis our results indicate that VL is still a public health problem with its severe presentation among patients in eastern Sudan. High clinical suspicion is very important and introducing the preventive measures (prevention of transmission through vector control and community awareness) are needed to reduce the spread of the infection.

Introduction
Visceral leishmaniasis (VL), also called kala-azar, is a parasitic disease caused by members of the Leishmania donovani complex (L. donovani and L. infantum) and transmitted by the female
phlebotomine sand flies of the genera Phlebotomus (Old World) and Lutzomyia (New World). It mainly affects areas in South Asia (India, Bangladesh, and Nepal) and Eastern Africa, where Sudan is the most affected country, followed by Ethiopia, Kenya, Somalia and Uganda. In Sudan, the causative agent is L. donovani, transmitted by the Ph. orientalis.
Gedaref State is the main endemic area of VL in Sudan. Passive detection figures from 1996 to 1999 have shown a mean yearly incidence between 6.6 and 8.4 VL cases per 1000 persons, with a large variation between villages (from 0 to 60 cases per 1000 persons per year) [2 , 3].
Villages with high incidence are clustered along two rivers (Atbarah and Rahad), in areas of low altitude and high rainfall. Leishmanin skin testing, a marker of past exposure to the disease, has been shown to be positive in 21.6% of the population of the Atbarah area [4]. Many individuals infected by L. donovani have subclinical infection, while others develop clinical VL, a devastating illness

that is usually fatal when left untreated. In Sudan, clinical signs develop gradually 2 weeks to 1 year after infection (in most cases

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after 2 to 4 months). Typical features are persistent fever, splenomegaly, weight loss and lymphadenopathies [5]. Post-kalaazar dermal leishmaniasis (PKDL) is a skin rash appearing after VL treatment, affecting up to 50% of treated cases in Sudan [6].

PKDL usually appears within 6 months after apparent cure and can last for months or years.

Leishmania parasites can be found in smears of the skin lesions, and PKDL lesions are suspected to be an important parasite reservoir for human-to-human transmission.

In Sudan, most lesions heal spontaneously. If not, PKDL treatment is challenging [7]. Some vector-control strategies such as indoor residual spraying have been shown to reduce the density of sand fly vectors in the Indian subcontinent [8], where the vector Ph. argentipes exhibits a behaviour different from the Sudanese vector. In Africa, bednet use has been shown to potentially reduce VL incidence [9]. Also, strategies to promote early detection and treatment have been shown to reduce case-fatality rates of VL in Brazil, where zoonotic .

VL is caused by L. infantum (syn. L. chagasi) [10]. Furthermore, early detection and treatment of anthroponotic VL patients is also believed to lower transmission through the reduction of the human reservoir [11]. This is supported by one pilot study that achieved good results using a combination of active detection, treatment and indoor residual spraying after a local outbreak of VL in one village located in the Bihar State of India [12]. However, although recommended, this strategy has never been formally evaluated in L. donovani endemic areas and is rarely implemented.

Since December 2009, Me´decins Sans Frontie`res (MSF) has been diagnosing and treating patients presenting at Tabarak Allah Hospital, located in Al-Gureisha locality of the the Atbarah focus.

MSF intended to conduct a cluster- randomized trial to evaluate the impact of an active VL and PKDL case detection strategy on the incidence of clinical VL. For the appropriate planning of this trial, a baseline survey was conducted in eligible villages around Tabarak Allah Hospital. The main objective of this survey was to estimate the incidence rate of VL over a one-year period at the village level. Additionally, we also aimed at retrospectively estimating the crude and VL-specific mortality rates, the proportion of VL cases missed by the passive case detection system in place, the proportion of the population treated for VL in the past, and the proportion of PKDL among patients previously treated for VL.

Since 1900s, visceral leishmaniasis (VL) has been among the most important health problems in Sudan, particularly in the endemic areas such as eastern and central regions [13].

Thus, the current study was conducted to investigate the Clinical and epidemiological aspects of visceral leishmaniasis in Al Gadarif teaching hospital Gadarif, eastern Sudan and the results of this study is expected to provide the health planners with fundamental data necessary for the implementation of preventive measures in this area of the country through early detection and proper intervention .

Methods

Study design and data collection

This was a cross sectional, hospital- based study conducted from 20th of October to 25th of December 2018 to describe the clinical and epidemiological features of visceral leishmaniasis among patients admitted at Al- Gadarif teaching hospital.

The cases included all patients from 1 with year to 79 years old with clinical symptoms of VL and in whom the diagnosis of VL was confirmed by laboratory test.

A structured questionnaire was used to gather the socio-demographic characteristics (age, residence, the education and occupation of both parents), duration of the illness, reason of clinical presentation (fever, fatigue, weakness, loss of appetite and weight

loss), clinical sign (pallor, jaundice, epistaxis or sign of bleeding tendency, enlarged lymph nodes, spleen and liver .
Proper systemic examination was performed to each patient by a paediatrician and physicians including cardiovascular system, respiratory system, abdomen, musculoskeletal system and central nervous system. Basic tests were performed for every patient on admission and repeated when clinically indicated. These included complete blood count, urine analysis, blood film for malaria, stool analysis and abdominal ultrasound. We looked for the parasite in bone marrow aspirate and other tissues using Giemsa-stain.

The diagnosis was confirmed by the visualization of the amastigote form of the parasite by microscopic

examination of aspirates from lymph nodes or bone marrow. Specific
anti-leishmanial drugs (sodium stibogluconate and parmomycin were first line while in cases with severe side effects liposomal ambisome was the second option) and the aggressive management of any concomitant bacterial or parasitic infections, anaemia, hypovolemia (decreased blood volume) and malnutrition was the treatment for the patients. All patients were under multidisciplinary care and were closely followed during their hospital stay and then every month in the refer clinic.