Outcome of patients with visceral leishmaniasis in Diyala province

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Abstract

Background: Visceral leishmaniasis is the second largest parasitic killer in the world after malaria.

Objective: The outcome of patient with visceral leishmaniasis in hospital samples depending on spot test for diagnosis.

Patients and Methods: This study was conducted in Al-Batool Teaching Hospital in Baqubah- Diyala province, during the period from January 2015 to December 2015. Thirty five collecting cases were suspected to have visceral leishmaniasis. History was taken regarding residence, gender, age, animal contact, blood group type. Clinical examination and investigation were done using complete blood count, abdominal ultrasound and spot test.

Results: In this study, thirty-five children were diagnosed as visceral leishmaniasis. It is found more among males (60%) than females (40%), more common in spring and winter, than in summer and autumn; which was (48.5%, 31%, 14% and 0.05%) respectively. High percentage recorded among patient with type (A) and (B) blood group, and less in (AB) and (O) (57%,22%,5%,14%) respectively also infection in rural area (71%) more than in urban (29%). Regarding the site of infection, organomegaly was (57%), splenomegaly (14%), hepatomegaly (17%), hepatosplenomegaly (26%) no-organomegaly(43%). All patients were anemic (43%), mild anemia (10 mg% and less) and (57%) severe anemia (7mg% and less). The percentage of duration of fever was 17%<week,31%(1-2) weeks,52%>2 weeks.

Conclusion: Visceral leishmaniasis is a common in patients live in rural areas that have contact with animals (Dog, fox and jackals).

Key words: Kalazar, Fever, Anemia, Organomegaly, Rural area.

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Introduction

Visceral leishmaniasis (VL), named kala-azar, black fever and Dumdum fever too[1], is the worse form of leishmaniasis. Leishmaniasis is caused by protozoan Leishmania genus. The parasite invade liver, spleen, bone marrow, if untreated, it will result in the death of the patient [2].The disease is distributed around areas of drought, famine, and crowded areas[3].

The species of *Leishmania donovani* found in East Africa and India and Middle East [4]. The insect vectors are sandflies. The life cycle of *Leishmania* is completed in

two hosts, humans and sandflies [5]. Visceral leishmaniasis progress to the host's mononuclear phagocyte system, particularly the spleen and liver[6]. The free amastigotes in peripheral tissues are then ingested by sandfly to enter another cycles[4].

Signs and symptoms of kalazar are fever, pallor, anorexia and weight loss with lethargy, frequent chest infection, spleen is enlarged and Liver is enlarged too, lymphadenopathy, skin become dry, thin, scaly and hair loss. Infected persons show darkening of the skin of face, limbs and abdomen which gives the Indian name Kala-azar meaning "Black fever", anemia becomes overt soon[7].

The exact clue for diagnosis is visualization of the amastigotes in splenic aspirate or bone marrow aspirate. Serological testing is more frequently used in endemic areas are(rK39) immunochromato graphic test, positive results in 92% of the people. Rapid test latex agglutination testis another, positive results in 64% of the infected people [8]. The DAT anti-leishmania antigen test is used more and it is not superior to K39 test [9][10].

There is no vaccine for VL developed yet. The prevention is by avoidness of sand fly bites. Avoid outdoor activities at night when sand flies are active, cover the skin bywearing long-sleeved shirts, long pants, and socks and the use of insect repellent to exposed skin is beneficial. An insecticide spray helps to kill insects[11]. Resistance to traditional drugs is now common [12]. amphotericin B[13]. In its various liposomal preparations is now used in India. Miltefosine is the first oral treatment for this disease and cure rate of Indian type is 95%, broad spectrum antibiotic paromomycin also used in treating VL [14].

The outcome of patient with visceral leishmaniasis in hospital samples depending on spot test for diagnosis.

Patients and Methods

This study was conducted in Al-Batool teaching hospital in Baqubah- Diyala during the period from January 2015 to December 2015. Thirty five collecting 35 cases were suspected as kalazar. History was taken regarding the residence, sex, age, animal contact, and blood group type. The clinical examination and investigation were done complete blood count, abdominal ultrasound), and spot test for kalazar (USA. Biotech) is used for diagnosis, which is rapid and accurate for diagnosis. Thus the diagnosis of kalazar is made and follow up and treatment with pentostam was initiated.

Statistical analysis

All data was analyzed by use Chi-square test.

Results

The results showed that out the distribution of VL is highest in 6 mouth-2 years age group (48.5 %), followed by 2-5 years (40%). While 2 patients at age < 6 month and >5 years had the same present, statistical analysis not revealed any significant difference as shown in table (1).

Table (1): The distributions of patients according to age.

Age	No.of patient	percent
< 6 month	2	5.7%
6 mo-2 years	17	48.5%
(2-5) years	14	40%
>5 years	2	5.7%
Total	35	100%

Chi-square value=21.34 P<0.0001

It was found that the percentage of kalazar among males was 60% more than females 40% as shown in table (2).

Table (2): The distributions of visceral leishmanial patients according to gender.

Gender	No.of patient	Percent of infection
Male	21	60%
Female	14	40%
Total	35	100%

Chi-square value=1.4 P=0.23

The result of study show the distribution of kalazar according to seasons which was 11 cases in winter, 17 cases in spring,5 cases in summer,2 cases in autumn, table (3).

Table (3): The distributions of patients according to season.

Season	No. of patient	Percent of infection
Winter	11	31%
Spring	17	48.5%
Summer	5	14%
Autumn	2	0.05%
Total	35	100%

Chi-square value=15.17 P=0.0016

Table (4) showed that distribution of kalaazar according to patient's blood group. There are 20 cases type (A), 8 cases type(B), 2 cases type (AB), 5 cases type (O).

Table (4): The distributions of patients according (Blood group).

Type of blood	No. of patient	Percent of infection
A	20	57%
B	8	22%
AB	2	5%
O	5	14%
Total	35	100%

Chi-square value=21.34 P<0.0001

In this study, the organomegaly in patient with kalazar was 6 cases was hepatomegaly,5 cases was splenomegaly,9 cases was hepatosplenomegaly,15caseson organomegaly table(5).

Table (5): The distributions of patients according to organomegaly.

Organomegaly	No.of patient	Percent of infection
Hepatomegaly	6	17%
Splenomegaly	5	14%
Hepatosplenomegaly	9	25%
No	15	42%
Total	35	100%

Chi-square value=6.94 P=0.07

Also found the percentage of duration of fever which was 17% <week, 31% (1-2) weeks, 52%>2 weeks, table(6).

Table (6): Distribution of patients according to duration of fever.

Duration	No.of patients	Percent of infection
<1week	6	17%
(1-2)weeks	11	31%
>2weeks	18	52%
Total	35	100%

Chi-square value=6.21 P=0.04

It was also found that all patients were anemic, 43% mild anemia and 57%, severe anemia,table(7).

Table (7): Distribution of patients according of pallor.

Pallor	No.of patient	Percent of infection
Mild	15	43%
Sever	20	57%
Total	35	100%

Chi-square value=0.71 P<0.39

The study showed the fate of patient with kalazar,25 patients was improved,8 patients was non improved,2 patients was die, table (8).

Table (8): Fate of patient.

Fate	No. of patient	percent
Complete treatment Improved	25 patient	72%
Not complete treatment*	8	23%
Death	2	5%
Total	35	100%

Chi-square value=24.42 P<0.0001

*They discharged onresponsibilities of their parents and contact with them is lost.

Discussion

Baqubah is the center of Diyala, therefore all suspected cases of kalazarare referred to Al-batool Teaching Hospital. The majority (88%) of studied cases were found between the age (6 months-5years) and just(5%) below 6months which may be due to the long incubation period of disease that varies from several weeks to 8 months[15]. On the other hand, there are (5.7%) above 5years due to immunity acquired by early exposure to disease in this area, this study is agree with a other study on Kalazar in Al-Anbar Governorate, Western Iraq in 2001[15].

In the present study males were found more affected than females due to exposure to vector during playing outdoors.

The highest number of cases was found in winter and spring because of long incubation period of disease and maximum density of sand flies in Iraq in summer months where insect bites occur and this is agree with Iraqi study by Al-Mamouri who determine the epidemiology during 1999-2003 [16].

Increase number of cases of kalazar was in rural area because of the contact with the animals like (dogs, jackals) and low education about protection from this disease.

Visceral leishmaniasis is found to be related to blood group type (A) (57%) as compared with other blood group type O, B, AB (14%, 22%,5%), this was agree with [16].

All patients were anemic as shown in table 6 because of the hemolysis which is the major cause of anemia in kalaazar [17]. All patients were presented with fever as shown in table 7, which it is the most common symptom.

Most cases (72%) respond well to pentostam therapy as shown in table 8, only(5%) cases died during treatment because they reach the hospital in advanced conditions.

In conclusion, visceral leishmaniasis is a common in patients live in rural areas that have contact with animals (Dog, fox and jackals).

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