
An Epidemiological study of kala-azar in Welfare hospital for children in Baghdad

Ataa AH Mousa Al-Rubaiy*

Waleed AT Al-Ani**

Abstract:

Background: Leishmaniasis is a major health problem worldwide. It is also a particular problem in the rural areas of Iraq

Objective: To determine an epidemiological feature's of group of Kala-azar patients attending welfare hospital for children in Baghdad

Materials & Method: A retrospective study was conducted in the Welfare hospital for children, starting on October 1st 2004 and ending on April 2005. The study included all children with amastigote-positive smears in bone marrow or in splenic aspirates, or a positive *Leishmania* sp immunofluorescence assay. Descriptive statistics included the use of frequencies and relative frequencies. The chi-square statistical test was used to test for associations between variables with results being considered as statistically significant when the p value was <0.05.

Results: The prevalence of Kala – azar was 1.02% of total patients admitted in the Welfare hospital during the period of the study. There was a distinct male preponderance with a male:female ratio of 1:5 :1. The age range of patients at the time of the study was 1- 9 years. Significantly most of cases (more than 6%) were from rural area compared with 34.3% from urban area. The percentage of males in the sample were more than females in the age group (2 -3, 6-7) years while the percentage of females were higher than males in the age group (<1 year). The highest percentage of cases occurs in February (24.07%) and lowest percentage in April (0%). The commonest presenting features were fever (55.6%), pallor (27.8%), and splenomegaly (16.6%). Of hospitalized patients, 66.7% stayed in the hospital for one month , 25.9% for two months and 7.3% for three months. The main outcomes were 27.8% of the patients developed complications, 65.5% alive, and only 6.4% were died.

Keywords: Kala-Azar, leishmania,

Introduction

Leishmaniasis is a major health problem worldwide. It is also a particular problem in the rural areas. The disease occurs in varying presentations, from the self-limited and even self-healing cutaneous forms to fatal systemic diseases^[1]. In India about 1,00,000 cases of VL are estimated to occur annual^[2] An increase in the incidence of human visceral leishmaniasis (HVL) has been detected in recent years on Margarita Island. The epidemiology of VL in that follows the pattern of a predominantly infantile disease traditionally found in Middle Eastern countries^[3].

Visceral leishmaniasis is the most severe form of the disease affecting children. The extent and presentation of the disease depend on several factors, including the humoral and cell-mediated immune response of the host, the virulence of the infecting species, and the parasite burden. Children are at greater risk than adults in endemic areas. Malnutrition contributes to the development of disease, and incomplete therapy of initial disease is a risk factor for recurrence of leishmaniasis. Children usually present with intermittent fever, pallor, refusal to feed or anorexia, weight loss, and abdominal distension. Splenomegaly, hepatomegaly, lymph node enlargement, thrombocytopaenia, anaemia, leukopaenia and hypergammaglobulinemia are the most common findings in Paediatric leishmaniasis^[4].

The present study was done in order to determine an epidemiological feature's of group of Kala-azar patients attending Welfare Hospital for Children in Baghdad

Materials & Method

A retrospective study was conducted in the Welfare hospital for children, starting on October 1st 2004 and ending on April 2005 included all children with amastigote-positive smears in bone marrow or in splenic aspirates, or a positive *Leishmania* sp immunofluorescence assay.

A special questionnaire was designed by the investigator to include information concerning demographic characteristic, age, gender, and residence.

The data was entered in computer for storage and analysis. Descriptive statistics included the use of frequencies, and relative frequencies.

The chi-square statistical test was used to test for associations between variables with results being considered as statistically significant when the p value was ≤ 0.05 (7)

Results

The prevalence of Kala - azar was (1.02%) of total patients admitted in the Welfare hospital during the period of the study. There was a distinct male preponderance with a male:female ratio of 1:5:1. The age range of patients at the time of the study was 1- 9 years. Most of cases were (more than 60%) from rural area compared with 34.3% from urban area, the association was found to be statistically significant ($P < 0.05$). (Table 1).

The percentage of males in sample were more than females in the age group (2 -3, 6-7) years while the percentage of females were higher than males in the age group (<1 year, 8-9). (Table 2)

Table (1). The distribution of cases according to residence

Residence	Males		Gender Females		Total	
	N	%	N	%	N	%
Urban	25	38.46	12	27.9	37	34.3
Rural	40	61.54	31	72.1	71	65.7
Total	65	100	43	100	108	100

P < 0.001

Table 2: The distribution of cases according to age & gender

	Age in years		Gender Females		Total	
	N	%	N	%	N	%
<1	29	44.61	22	51.17	51	47.22
2-3	23	35.38	12	27.9	35	32.41
4-5	8	12.31	8	13.95	16	14.81
6-7	2	6.15	2	4.65	4	3.71
8-9	1	1.55	1	2.32	2	1.85
Total	65	100	43	100	108	100

P=0.17

The highest percentage of cases occurs in February (24.07%) and none in April, the association was found to be statistically non-significant (P=0.17) (Table 3, Figure 1). The commonest presenting features were fever (55.6%),

pallor (27.8%), and splenomegally (16.6%). The main outcomes were 27.8% of the patients developed complications, 65.5% alive, and only 6.4% were died.

Table 3. Distribution of cases according to commonest presenting features

Commonest presenting features	No.	%
Fever	60	55.6
Pallor	30	27.8
Splenomegally	18	16.6
Total	108	100

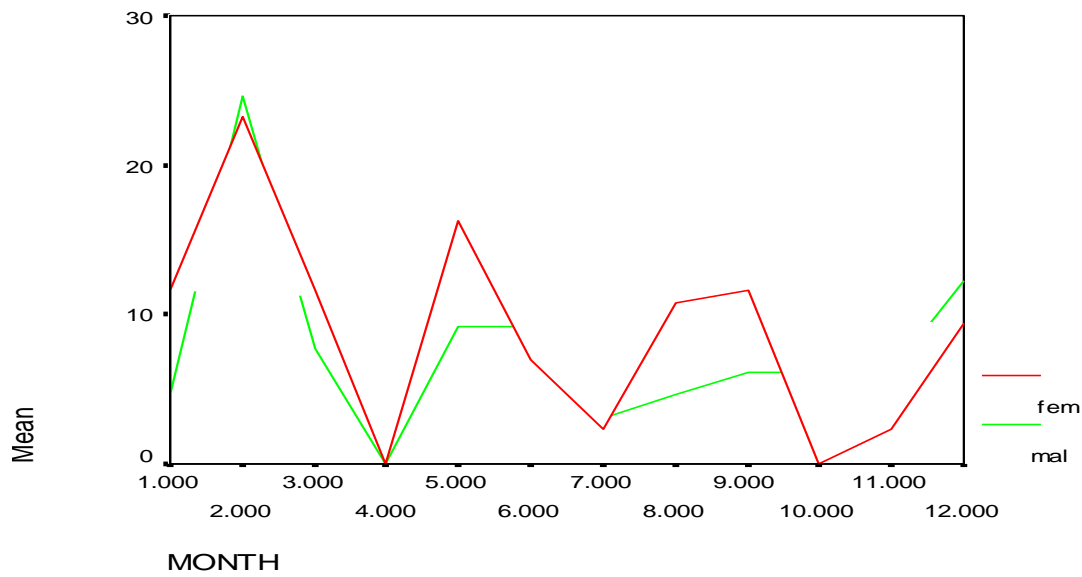


Figure 1 shows the distribution of kala-azar as percentages according to months and gender

Of hospitalized patients 66.7% stayed in the hospital for one month, 25.9% for two months and 7.3% for three months (Table 4). (Table 5) show

the come of patients with kala-azar of which 19(17.6%) died from their defeare

Table 4 Distribution of cases according to days of hospitalization

Days of hospitalization	No.	%
1month	72	66.7
2 month	28	25.9
3month	8	7.4
Total	108	100

Table 5 Distribution of cases according to the outcome

Outcome	No.	%
Complicated	24	22.3
Death	19	17.6
Alive	65	60.1
Total	108	100

Discussion

Kala - azar was reported for the 1st time in Iraq in 1916 Known to be endemic in 1954, Two main species of sand Fly vector were suspected in Iraq *Phlebotomus papatasi* and *P. alexandri*. The main reservoir in Iraq are Jackals and dogs ^[6]. In this study it was found that the kala-azar represent 1.02 of the total cases admitted to the welfare hospital during the period of the study . these results are similar to those of(Suhad ^[7]and thear ^[8] in Iraq).the true prevalence of kala-azar among general population cannot be extrapolated from this study because the is considered as a convenient sample which is subjected to selection bias and does not represent the total kala-azar in the community The percentage of males in the sample was (60.1) and of female (39.9) with a male:femle ratio 1:5:1 which shows a distinct male preponderance similar to those of (AL-Rahim ^[9] and Suhad ^[7] in Iraq). Most cases (more than 60%) from rural area compared with (34.3) from urban area. This results is similar to other published studies (Suhad in Iraq ^[7] in AL- Qadisiyah province) due to presence of vector and their breeding places in rural more than urban area. The higher rate of infection occur in the age (< 1 Year) affecting mainly infant that is called infantile Kala - azar (47.22) that is similar to other published studied (EL.Safi and Bucheton ^[10] in Sudan.

The highest percentage of cases occurs in the February and lowest percentage in April This result is similar to result of endemic disease institute in Iraq because the transmission of the disease in Iraq probably Occurs around September and the vector density occurred also in September that suggested appearance of the peak cases of Kala - azar in the - First months of winter season (Thaar A, 2004^[8]) The commonest presenting features were fever (55.6%), paller (27.8%), and splenomegally (16.6%). Of hospitalize patients (66.7%)were stays in the hospital for one month, (25.9%)for two months and (7.3%)for three months.

The main outcomes were (27.8%) of the patients developed complication s, (65.5) alive ,and only (6.4%) were died .These results are similar to

what had been reported ^[1,2, 3].

In conclusion, the prevalence of Kala-azar in welfare hospital for children was 1.02% during the study period with most cases from rural area. A higher percentage occur in February and none in April. The commonest presenting features were fever, pallor, and splenomegally.

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- *Assistant lectureur, Technical Medical Institute College, Community Medicine department.**
****Assistant Professor, Al-Mustansiriya Medical College, Community Medicine department.**