Seroepidemiological study of kala azar among adults in Al- Anbar governorate.

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Receiving Date: 15-12-2010 **- Accept Date:** 16-03-2011

Abstract

Kala azar is endemic in parts of Iraq. Aseroprevalence study was carried out in the adults in AL-Anbar governorate Serum samples were taken form 202 adult from both sex between 18-73 year old from different areas in AL- Anbar in the period from January to December 2008 and by using immune chromatographic strip test . There was no significant cant difference in sero positivity between the sexes(9.9% males & 11.9% females) . the highest rate of infection (3.46 %)was in the age group 24-30 years,among all seroposivity visceral leish maniasis cases included in this study , the highest frequency of visceral leishmaniasis was reported in july 7cases(2.9%).Further studies are needed explore the reservoirs and vectors of the disease in this region.

Introduction

Visceral leishmaniasis caused by *Leishmania donovane* and transmitte by bite of infected sand fly (Phelebotomus spp) . Half of the visceral leishmaniasis cases occur in the children[1].Although the insect vector is the rout of transmission , other exceptional routs such as direct dog to gog , tick bite , blood transmission , sexual transmission and congenital transmission[2,3] .It is conceivable that factors such as migrations due to socio-economical problems & easy travel have made the spread of disease farm one place to another easy [4] . In addilion to human visceral leishmaniasis is also found in animals as reservoire host for that concentrated in small rural localities [5] . Visceral leishmaniasis is a chronic disease characterized by persisting of fever , weight loss , hepatosplenomegaly &anemia [6] visceral leishmaniasis is a fetal disease , death occurred in 27% . of cases which left without treatment [7,8]. The rats of infection which visceral leish maniasis in Iraq & other countries were as the following :- In Iraq Basrah 25.8% – [9] , Baghdad 29%- & Wasit 47.8% . [10] . In Kuwait (6.5%) [11] , Turkey 7.4%. [12],In Iran 8.2%. [13],Africa 60% [14] .

The aim of the study

1- To investigate the prevalence of visceral leash manias is among adults in Al-Anbar governorate.

2- To evaluate possible effect of age, gender and season on the epidemiology of disease .

Material & methods

In Bios kala azar rapid strip test is a qualitative membrane for the detection of antibodies to visceral leashmaniasis in human serum .

The membrane is recoated with rk_{39} on the test line region and chicken anti-protein A on the control line region. During testing the serum sample reacts with the dye conjugate (protein A colloidal gold conjugate) which has been percoated in the test devise. The mixture then migrate up ward on the membrane chromatographically by capillary action to react with recombinant visceral leishmaniasis agitation on the membrane and generates ared line , Presence of these red line indicates a true result while absence indicates a negative result . Allow the sera to reach room temperature prior to testing . Add 20ML of sera to the test strip in the area beneath the arrow place the test strip into atest tupe and add 150ML of the chose

buffer solution provided with this test kit. Read the result in 10 minute , the test is positive when a control line test line appear in the test area . Apositive result indicates that the kala-azar dipstick detested antibodies to membrane of leishmaniasis. The test is negative when only the control line appears.

Results

The positive cases of kala- azar was 22 (10-9%) of 202 of total cases as shown in table -1-

Table -1-The frequency of kala-azar cases

Kala-azar cases	Frequency	Percent %
Positive	22	10.9
Negative	180	89.1
Total	202	100

The highest Frequency of Positive cases was found in the age group 24-30 years as shown in the

Table-2- The Frequency of anti kala-azar Abs

Age group	Cases	Total anti kala-azar Abs	
		Positive	Negative cases
18-23	42(20.79%)	2(0.99%)	40 (19.8%)
24-30	55(27.22%)	7(3.46%)	48(23.7%)
31-36	48(23.76%)	4(1.98%)	44(21.78%)
37-42	34(16.83 %)	5(2.97%)	28(13.86%)
43-48	13(6.43%)	2(0.99%)	11(5.44%)
49-54	7(3.43%)	2(0.99%)	5(2.47%)
55-61	2(0.99%)	0(0.0%)	2(0.99%)
62-67	0(0.98%)	0(0.0%)	0(0.0%)
68-73	1(0.49%)	0(0.0%)	1(0.44%)
Total	202	22	180

Table-3- Describe of anti kala- azar relation with age group and gender

Age group	Male		Female		Total
	+Ve	Percent	−Ve	Percent	
18-23	1	0.49%	1	0.49	2
24-30	3	1.48	4	1.98	7
31-36	2	0.99	2	0.99	4
37-42	2	0.99	3	1.48	5
43-48	1	0.49	1	0.49	2
49-54	1	0.49	1	0.49	2
55-61	0	0	0	0	0
62-67	0	0	0	0	0
68-73	0	0	0	0	0
Total	10	4.93%	12	5.92	22(10.9%)

Table-4- The distribution of Kala-azar with mounth

Mounth		January	February	March	April	May	June	July	August	September	October	November	December	Total
Anti Kala-azar	+Ve	0	0	1	2	1	5	6	4	3	0	0	0	22
	−Ve	3	11	10	6	19	28	27	20	20	19	15	2	180
Total		3	11	11	8	20	32	33	24	23	19	15	2	202

Discussion

Serum samples were examined using dipstick rk39 , the positive cases of visceral leishmanias is was 22(10.9%) of 202 , this percent agreement with rate of infection in Abu-Al- Khassib (10.1%) [9] & Iran (8.2%)[13] & disagreement with Africa (60%0)[14] and other studies may be because the environmental conditions such as nutrition factors & adaptation of the vector sand fly in these area …etc.

Among sero- epidemiological studies – although the highest seropassivity was in age groups 24-30 years (3.46%) , there were no significant differences between different age groups , this is agreement with the study in Iran (3.1%) [15] , this result may be because the way of life of the inhabitants , such farming keeping guard dogs & a nomadic life style , might account for such ahigh prevalence of visceral leishmaniasis in the region .

ISSN: 2222-8373

There was no significant differences (p>0.05)in the frequency of the disease between males & females this is agreement with more studies such as in Basrah [9] & disagreement with Ardabil province which boys in there studies was 56.4% of kala azar [16].

Seasonal variation was observed in the study . Among all zero positivity visceral leishmaniasis cases in this study the highest Frequency of visceral leishmaniasis was reported in July 6 cases (27.2%),while the lowest number of cases was reported in October cases (0%) this results agreements with the study in Basrah [9] , while disagreement with the study in Iran [13] , may be because the variation in the environmental condition such as temperature which is the main factor in the epidemiology of disease.

Conclusion

Presence of kala-azar in Al-Anbar governorate especially in the age group 24-30 years .

Recommendation

1-Study about presence the parasite in the insect in this region and species of vector.

2-Study about genotype of disease.

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