Epidemiological study of the KALA-AZAR cases in Iraq for the years (1999-2003)

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Summary

An epidemiological (retrospective) study of KALA-AZAR cases in Iraq was conducted during July 2004 , to study the epidemiological distribution of KALA-AZAR cases in Iraq for the years (1999-2003) comparing it with the cases of the previous years (1994-1998) .

Data were collected from the communicable diseases control "CDC" center of Baghdad with detailed information of age , gender , time and seasonal distribution , which recorded for the last years (1999-2003) , also with data of the KALA-AZAR cases for the previous years (1994-1998) , while the data concerning study population was obtained from the planning directorate of MOH depending on the last cansus reports of 1997 , most of the Iraqi governorates were included (except the self-rule's governorate). The different governorates were categorized according to the number of KALA-AZAR cases and to their geographical position .

Statistical analysis was done using the descriptive statistics (frequencies , percentages and ratios) .

The results of this study were based on epidemiological analysis of (12145) KALA-AZAR cases reported from different Iraqi governorates for the years (1999-2003) , it was found that highest frequency of KALA-AZAR cases (79.5%) were reported from the southern governorates , there was increased number of KALA-AZAR cases for the last years (1999-2003) when compared with the previous years (1994-1998) records , which was (12145) and (2913) respectively (i.e. about four times more) , there was equal gender

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5- The majority of KALA-AZAR cases were reported during Winter and Spring seasons .

Recommendations

1- Collaboration of CDC center with WHO authorities for scientific and economic cooperation .
2- Regular application of proper insecticides and other control measures recommended by international authorities , with periodic and scientific evaluation of these preventive programs .
3- Expanding the role of public health education and participation in disease control .
4- Availability of diagnostic facilities , low cost drugs , together with proper surveillance mechanisms at primary health centers .

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- Table (4) : Indicates that the KALA-AZAR is a serious health problem affecting children less than five years of age .

This finding agrees with the previous studies carried out it Iraq (Al-Rahim , 1994 ; Al-Alak , 1996 ; Al-Barazinji and Al-Waiz , 2000 ; Al-Joubori and Baqir, 2000 ; Al-Naddawi et al, 2000 ; Al-Majeed , 2001 ; Al-Ani , 2004) , also it goes with the other international reports (Neouimine , 1996 ; Wyler and Davidson , 1996 ; Bryceson , 1998 ; Campel and Intosh , 1998 ; Xelly , 1998).

- Table (5) : Shows that the majority of KALA-AZAR cases were reported during Winter and spring seasons , as it is well known that the average incubation period of KALA-AZAR is 2-6 months , it can be concluded that the Summer and Autumn seasons are the period of high vector density and/or high vector – human conact .

This result agrees with that of Abulhab and Al-Hashimi (2001) and with study done in Wasit governorate by Al-Ani (2004) .

Conclusion and Recommendations

Conclusions

1- Highest frequency of KALA-AZAR cases were reported from the southern governorates .
2- There was increased number of KALA-AZAR cases for the last years (1999-2003) when compared with the previous years (1994-1998) , four times more .
3- There was equal distribution of the KALA-AZAR cases in both gender .
4- KALA-AZAR is a serious health problem affecting children less than five years of age .

Discussion

- Table (1 & 2) with figure (1) show two main findings ; the first one was the highest percentages of KALA-AZAR cases were reported from the southern governorates & the lowest percentages were from the northern governorates, the second finding was that : there was increased number of KALA-AZAR cases for the last years (1999-2003) when compared with the previous years (1994-1998) .

These findings go with what was written by different Iraqi physicians (Al-Alwan , 1990 ; Al-Alak , 1996 ; Al-Naddawi et. al., 2000 ; Al-Majeed , 2001 ; Mustafa , 2001 ; Al-Ani , 2004).

Many factors contribute to the maintenance of disease transmission cycle in our country including the several wars in this region since 1980 , besides the economic sunction imposed on Iraq since 1990 and the rapid unplanned urbanization . These factors lead to deterioration of both community and individual resources including health services and the control measures against KALA-AZAR which were interrupted , together with irregular use of insecticides and ignorance of public education and participation in the national control program , all of these lead to the appearance of several outbreaks .

- Table (3) : Shows that the male to female ratio was nearly equal , against what was previously written (Bryceson , 1998 ; Xelly , 1998) , they mentioned that males are usually affected twice as often as females .

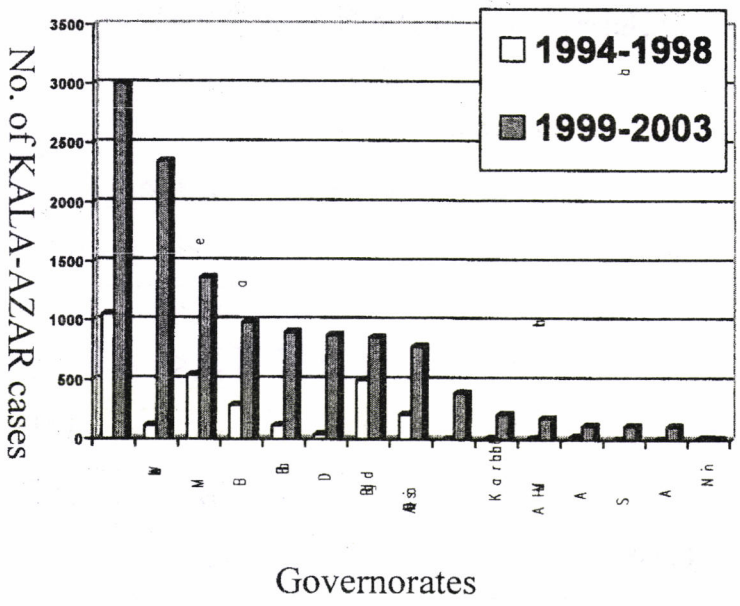

Figure (1): Distribution of the KALA-AZAR cases in the two different periods (1994-1998) and (1999-2003)

Table (5) : Seasonal distribution of the KALA-AZAR cases for the years 1999-2003

The period of Time	Seasons of the year				Total
	Winter	Spring	Summer	Autumn	
1999	471	178	64	144	857
2000	1198	821	278	313	2610
2001	1288	1076	383	186	2933
2002	1175	1259	443	341	3218
2003	1287	257	455	528	2527
Total	5419	3591	1623	1512	12145
%	44.6	29.6	13.4	12.4	100.0

- Figure (1) : Shows the distribution of the KALA-AZAR cases in the two different period (1994-1998) and (1999-2003) , we noticed that the number of cases were increasing from 2913 cases in the previous years (1994-1998) to 12145 cases in the last years (1999-2003) , (i.e.: about 4 times more).

Table (3) : Gender distribution of the KALA-AZAR cases for the years (1999-2003)

The period of time	Gender		Total	%
	Male	Female		
1999	512	345	857	7
2000	1380	1230	2610	21.5
2001	1590	1343	2933	24.2
2002	1812	1406	3218	26.5
2003	1491	1036	2527	20.8
Total	6785	5360	12145	100.0
%	55.9	44.1	100.0	

- Table (4): Shows that the most frequent cases occurred in children below five years of age who constitute the major percentage (93.5%) ,

Table (4) : Age distribution of the KALA-AZAR cases for the years (1999-2003)

The period of time	Age groups (year)					Total	%
	<1	1-4	5-8	9-12	≥ 13		
1999	370	387	67	13	20	857	7
2000	968	1446	143	29	24	2610	21.5
2001	1071	1694	140	21	7	2933	24.2
2002	1360	1685	150	12	3	3218	26.5
2003	1233	1139	141	10	4	2527	20.8
Total	5002	6351	649	85	58	12145	100.0
%	41.2	52.3	5.3	0.7	0.5	100.0	

- Table (5): Shows the seasonal distribution of the KALA-AZAR cases , and it reveal that the highest frequency was in winter (44.6%) followed by spring (29.6%) , summer (13.4%) and then Autumn (12.4%) .

- Table (2): Shows the geographical distribution of the KALA-AZAR cases (i.e. : geographical sites of the governorates) , we noticed that the governorates from southern areas constitute the highest frequency (79.5%) , while the lowest frequency was recorded from the northern areas (3.3%).

Table (2) : Geographical distribution of the KALA-AZAR cases for the years 1999-2003 .

The period of time	Geographical Dist.			Total
	Northern	Middle	Southern	
1999	4	227	626	857
2000	20	530	2060	2610
2001	116	398	2419	2933
2002	146	578	2494	3218
2003	114	361	2052	2527
Total	400	2094	9651	12145
%	3.3	17.2	79.5	100.0

- Table (3) : Shows that the male to female ratio was 1.3:1 which means nearly equal distribution .

The average per month was 202.4 cases .
The incidence rate = 0.7 per 1000 in children below five years of age (N.B.: number of child below five years was 3636614 according to the last census of 1997) .There was increased number of cases during 2002 which constituted (26.5%).

Table (1) : Distribution of the KALA-AZAR cases in different Iraqi governorates for the years (1999-2003)

	Governorate	1999	2000	2001	2002	2003	Total	
1	Thekar	110	529	837	844	682	3002	24.7
2	Wasit	87	736	589	517	419	2348	19.3
3	Messan	167	268	338	220	271	1264	10.5
4	Basrah	173	323	266	90	129	981	8
5	Babil	35	73	139	438	215	900	7.5
6	Dialah	94	204	160	264	154	876	7
7	Baghdad	130	281	214	159	72	856	7
8	Al-Qadissia	29	60	172	332	188	781	6.5
9	Al-Ta'amim	-	20	61	121	191	393	3
10	Karbala'a	5	57	51	56	46	215	2
11	Al-Muthana	2	12	53	61	51	179	1.5
12	Al-Anbar	17	42	25	27	4	115	1
13	Salaheldin	2	3	10	52	47	114	1
14	Al-Najef	2	2	14	36	58	112	0.9
15	Ninova	4	-	4	1	-	9	0.1
Total		857	2610	2933	3218	2527	12145	100.0
%		7	21.5	24.2	26.5	20.8	100.0	

Patients and Methods

In July 2004 a retrospective study of the visceral leishmaniasis (KALA-AZAR) cases was conducted, the data were collected from the communicable disease control "CDC" center of Baghdad; including the number of leishmaniasis cases (Visceral & cutaneous) , their age , gender and time distribution which were recorded for the period from 1999 to 2003 , also data of the KALA-AZAR cases for the pervious period from 1994 to 1998 were collected . Detailed informations concerning the KALA-AZAR cases were studied .

Data about study population were obtained from the planning directorate in the Ministry of Health by personal communication , depending on the last census reports of 1997 .

The governorates were arranged according to the number of KALA-AZAR cases reported in the two different periods (1994-1998) and (1999-2003) , also the governorates were categorized into three geographical areas (North , middle and south) according to their site or position on the map of Iraq (i.e. : Northern governorates include Ninova , Al-Ta'amim and Salaheldin & Middle governorates include Baghdad , Diahla and Al-Anbar, while the Southern governorates include Thekar , Messan , Basrah , Karbala'a , Al-Najef , Al-Muthana , Al-Qadissia and Babil) . The self-rule's governorates were not included .

Statistical analysis was done using the descriptive statistics (Frequencies , Percentages and ratios) (Daniel , 1999).

The Results

The study were based on epidemiological analysis of (12145) KALA-AZAR cases reported in different Iraqi governorates for the years (1999-2003).

Table (1) : Shows that the KALA-AZAR cases reported from Thekar governorate constitute the highest frequency (24.7%) while those from Ninova constitute the lowest frequency (0.1%) .

The average per year was 2429 cases .

للمدن مماساعدت على تدهور الخدمات الصحية والوقائية لذا نوصي بضرورة التعاون والأتصال بين المركز الوطني للسيطرة على الأمراض الأنتقالية ومنظمة الصحة العالمية في مجال الرفد العلمي والمادي مع التطبيق لبرنامج الوقائي للمكافحة وللحد من أنتشار الحمى السوداء وتوسيع المشاركة الجماهيرية وتوفير المستلزمات والأدوية العلاجية وعلى مستوى المراكز الصحية.

Introduction

Leishmaniasis is an important public health problem , however it's current controlling efforts are insufficient (Neouimine , 1996) .

Leishmaniasis occurs mostly in rural areas of worm and tropical countries were public health infrastructures are inadequate (Bryceson , 1998).

In Iraq , especially in middle and Southern governorates , visceral Leishmaniasis (KALA-AZAR) was regarded as an endemic disease since 1954 (Al-Naddawi et al, 2000).

The population movement and deterioration of health and vector control services during the previous wars and economic sanction imposed on Iraq since 1991 with all their sequences (e.g. poverty , malnutrition , ... etc.) contribute to the outbreaks of Leishmaniasis in the area (Al-Alwan , 1990 ; Al-Rahim , 1994 ; Al-Majeed , 2001 ; Al-Ani , 2004).

The success of control measures depends on a basic understanding of the disease's epidemiology , the cultural and social customs of the population and periodic evaluation (Marquorat et al, 2000 ; Paettanayk , 2001).

Aims of the study

To find the incidence rate , age , gender and time or seasonal distribution of KALA-AZAR cases in different Iraqi governorates in the period from 1999 to 2003 .

To compare these results with the results of the previous period from 1994 to 1998 .

distribution , it was found that KALA-AZAR mostly affecting children below five years of age (93.5%), the majority of KALA-AZAR cases were reported during Winter & Spring (74.2%) . It was concluded that many factors contributes to the maintenance of disease transmission cycle in our country including the several wars, the economic sunction & rapid unplanned urbanization, which lead to deterioration of both community and individual resources including health services & control measures .

It was recommended that collaboration of the CDC center with WHO for scientific & economic support with regular application of proper insecticides & other control measures with periodic and scientific evaluation of the preventive programs . Also expanding the role of public health education & availability of diagnostic facilities , low cost drugs with proper surveillance system at primary health centers .

الخلاصة

أجريت دراسة وبائية (تراجعية) لحالات الأصابة بالحمى السوداء (اللشمانيا الحشوي) بالعراق للسنوات (1999-2003) ، وذلك خلال شهر تموز 2004 . تهدف الدراسة لايجاد التوزيع الوبائي للأصابة بالحمى السوداء في العراق حسب نسب الأصابة ، العمر ، الجنس ، الوقت ، أو الموسم ، ولمقارنة النتائج مع الحالات المسجلة للسنوات السابقة (1994-1998) . جمعت البيانات من المركز الوطني للسيطرة على الأمراض الأنتقالية في بغداد والتي شملت معظم محافظات القطر ماعدا محافظات الحكم الذاتي ، تم أخذ المعلومات السكانية للعراق من دائرة التخطيط بوزارة الصحة أعتمادا على أخر أحصاء سكاني لعام 1997. رتبت المحافظات طبقا لعدد حالات الأصابة وحسب الموقع الجغرافي ، أعتمدت النتائج على التحليل الأحصائي الوبائي لحالات الأصابة بالحمى السوداء والمسجلة خلال السنوات 1999-2003 والتي بلغت (12145 حالة) ، واضهرت النتائج بأن اعلى نسبة للأصابة (79.5%) سجلت في المحافظات الجنوبية ، وتبين زيادة نسبة الأصابة بالسنوات الأخيرة 1999-2003 مقارنة بالفترة الماضية 1994-1998 فكانت 12145 و2913 حالة على التوالي أي بزيادة 4 مرات تقريباً وهناك تساوي بتوزيع الأصابة بين الجنسين ولوحض زيادة نسبة الأصابة عند الأطفال دون الخمس سنوات (93.5%) ومعظم الحالات سجلت خلال الفصول الباردة 74.2% مما تقدم نستنتج ان هناك عدة عوامل أدت الى تعزيز أو أدامة دورة أنتقال المرض في القطر والتي شملت ضروف الحرب والحصار الأقتصادي والتوسع غير المنتظم