

Cutaneous Leishmaniasis among Immigrants in Iraq

Dr. THIKRA HUSSEIN AL - TIMIMI.

M.B.Ch.B., F.I.C.M.S.

Department of Dermatology and Venereology at Al-Yarmouk teaching Hospital, Baghdad, Iraq

Abstract

Background and objectives: To determine the incidence of cutaneous leishmaniasis (CL) in Al-Yarmouk teaching Hospital among immigrants who leave their own homes due to war and terrorism. **Methodology:** A retrospective survey was performed in the out patient clinic of Al-Yarmouk teaching Hospital. All patients who presented with clinical features of cutaneous leishmaniasis (CL) at the dermatology department were enrolled in the study during the period from September 2014 to the end of June 2015 who were documented in the hospital's records which includes their address because an increasing number of cutaneous leishmaniasis was noticed. Compared to number of patients having cutaneous leishmaniasis during the period from September 2013 to the end of June 2014. The provisional diagnosis of cutaneous leishmaniasis was dependant on clinical experience but biopsies were performed for questionable cases. **Results:** A total of 170 cutaneous leishmaniasis were diagnosed during the study period with the immigrants representing 70% of total cases. Compared to a total of 73 patients recorded for the same period of time during the previous year. The highest number of cases was recorded during February 2015, while the lowest number was recorded in December 2014. **Conclusions:** An increasing number of cutaneous leishmaniasis (CL) was noticed among Iraqi immigrants due to their unhealthy and crowded environment where they were forced to live because of war and terrorism.

Keywords: Cutaneous leishmaniasis, iraqi immigrants.

Introduction

Leishmaniasis is a disease caused by protozoan parasites of the genus leishmania and spread by the bite of certain types of sand flies. Risk factors include poverty, malnutrition, deforestation, and urbanization. The disease may occur in a number of other animals, including dogs and rodents [1].

Leishmaniasis is transmitted by the bite of infected female phlebotomine sandflies which can transmit the infection leishmania [1].

This disease is considered to be a zoonosis (an infectious disease that is naturally transmissible from vertebrate animals to humans), with the exception of leishmania tropica which is often an anthroponotic disease (an infectious disease that is naturally transmissible from humans to vertebrate animal)[4].

Only the female sandfly is hematogenous, phlebotomine sandflies are less than 3mm long and do not fly far from their breeding site. Their activity is mostly nocturnal while the host is asleep. They rest during the day and lay eggs in dark, humid and organic matter-rich places such as rodent burrows; bird nests and house wall fissures. Being exophilic and exophagic, they prefer to rest and to have their meal outdoors, which limits their control by house spray[5].

Leishmaniasis may be divided into the following types:[2].

- Cutaneous leishmaniasis is the most common form, which causes an open sore at the bite sites, which heals in a few months to a year and half, leaving an unpleasant-looking scar [1][3]. Lesions heal within one year characterized as acute cutaneous leishmaniasis while disease lasting more than one year is termed chronic cutaneous leishmaniasis [6]. Diffuse cutaneous leishmaniasis produces widespread skin lesions which resemble leprosy, and may not heal on its own [3].

In Old World cutaneous leishmaniasis two major types are identified:

- a. Moist or rural type: characterized by multiple lesions, short incubation period (one week to three months), rapid and mild course and good response to therapy. Rodents are the main reservoir.
- b. Dry or urban type: characterized by longer incubation period and course (twice as long as in the moist type) and by a worse response to therapy and a single dry ulcer over the face is characteristic[7]. Rarely after the initial or mother lesion is healed, there may appear at the border of the healed area a few soft red papules covered with whitish scales this is known as leishmaniasis recidivans and occur most commonly with the urban type of disease [8].

In New World cutaneous leishmaniasis: pure cutaneous disease is very similar to old world cutaneous leishmaniasis and isolated ulcers are the most common presentation[7], subcutaneous peripheral nodules may signal extension of the disease which is called sporotrichoid pattern with lymphadenopathy [8].

Disseminated cutaneous leishmaniasis may be seen in both New and Old World disease in which multiple nonulcerated papules and plaques chiefly on exposed surface which characterize this type [8].

Complications of cutaneous leishmaniasis are:

1. evolution to diffuse cutaneous leishmaniasis, chronic cutaneous leishmaniasis and mucocutaneous leishmaniasis in new world cutaneous leishmaniasis. Acquired immunodeficiency syndrome (AIDS) and other immunosuppressive conditions increase the risk of mucocutaneous and visceral dissemination [9]
2. Secondary bacterial infection, scarring, disfigurement and social stigma.[8].
 - Mucocutaneous leishmaniasis causes both skin and mucosal ulcers with damage primarily of the nose and mouth [1][3].
 - Visceral leishmaniasis or kala-azar (black fever) is the most serious form, and is potentially fatal if untreated [1], in kala-azar the leishmanoid may be widely distributed throughout apparently normal skin and during or after recovery from the disease a special form of dermal leishmaniasis known as postkala-azar dermal leishmanoid may occur [8].

Diagnosis of cutaneous leishmaniasis:

Given the potential treatment toxicity, confirmation is always recommended which include skin biopsy with histologic exam, smear and culture [10], while the gold standard for diagnosis is PCR [11], the leishmanin intradermal test may be helpful in making the diagnosis in nonendemic population, it becomes positive some 3 months after infection [8].

Treatment of cutaneous leishmaniasis [8,12]:

Multiple, persistent, progressive, deep and secondarily infected lesions should be treated as well as lesions on cosmetically or functionally important sites.

In general old world cutaneous leishmaniasis requires shorter courses than new world cutaneous leishmaniasis.

● Local therapy for leishmaniasis:

- ① intralesional antimony (sodium stibogluconate) may be combined with cryotherapy.
- ② cryotherapy, local heat or, electro therapy , and laser ablation.
- ③ paromomycin ointment.
- ④ topical azoles such as ketoconazole cream under occlusion.
- ⑤ others: ethanolic formulation of amphotericin B , topical hypertonic sodium chloride, topical glycer-trinitrate , intralesional metronidazole and perilesional injections of interferon-gamma have been reported to be effective but are expensive.

● Systemic therapy which can be divided into :

- Systemic antimonial therapy such as sodium stibogluconate (pentostam) is given intramuscularly or intravenously 20mg/kg/day in two divided doses for 28 days, and meglumine antimoniate which are pentavalent antimony with comparable efficacy and safety profile.
- Non-antimonial therapy:

- ① Amphoterecin B can be used in antimony resistant disease.
- ② paromomycin
- ③ miltefosine: new treatment option which has shown in several clinical trials to be very efficient and safe in visceral and cutaneous leishmaniasis. The drug is generally better tolerated than other drugs. Main side effects are gastrointestinal disturbance in the 1-2days of treatment which does not affect the efficacy.
- ④ azoles.in Saudi Arabia, a six -week course of oral fluconazole 200mg daily has been reported to speed up healing[13], , while in a randomized clinical trial from Iran, fluconazole 400mg daily was shown to be significantly more effective than fluconazole 200mg daily in the treatment of cutaneous leishmaniasis [14].
- ⑤ terbinafin.
- ⑥ metronidazole.
- ⑦ dapsone.
- ⑧ interferon gamma.
- ⑨ trimethoprim-sulfamethaxozol.
- ⑩ rifampin.
- quinolone.
- oral zinc sulfate.

Control depends chiefly on the success of antifly measures taken by health authorities.

Patients and Methods

It has been noted in the out patient clinic of Dermatology and Venereology at Al-Yarmouk teaching hospital that there are an increasing number of patients with cutaneous leishmaniasis attend the clinic seeking for treatment for their condition, this led me to review the hospital record's since September 2014 to June 2015 and compare it to the records of the same out patient clinic of the same hospital from September 2013 till June 2014.

It has been noted from the records that the majority of affected patients were immigrants came to Baghdad from other iraqi provinces due to war circumstances and live in refugee camps, they constitute 70% of cases (119 patients out of 170 case of cutaneous leishmaniasis) during the period of time from September 2014 to June 2015, while the records of the previous year from September 2013 till June 2014 showed only 73 case (there is an increasing incidence of about 42.94% compared to the previous year) where there was no immigrants at that time (before war circumstances which started at June 2014).

Most of the patients were diagnosed clinically, except for 3 patients where biopsy was performed to confirm the diagnosis(1.76% of cases need biopsy).

Almost all of our patients had moist type cutaneous leishmaniasis clinically. It has been noted that most of the patients presented with secondary bacterial infection among immigrants.

Results :A retrospective survey was done at the out patient clinic of Dermatology and Venereology at Al - Yarmouk teaching Hospital in Baghdad, the hospital's records were reviewed from September 2014 to June 2015, one hundred seventy patients were diagnosed with cutaneous leishmaniasis compared to seventy three patients only recoded since September 2013 till June 2014 (42.94 % increment in incidence of cutaneous leishmaniasis during the last period).

Out of one hundred seventy patients, 119 patients were immigrants (70%) compared to 51 patients (30%) who were non - immigrants.

The highest number of cases was recoded during February 2015 (18.8%) , while the lowest number was recorded in December 2014 (5.8%) of cases . Tab.1

Similarly the highest number of cases was recoded during February 2014 (20.5%), and the lowest number was recorded at December 2013 (5.47%) of cases. Tab.2

Number of children had the disease below 12 years were 85 out of 170 patients (50%) while those yonger than 2 years were 54 out of 85 patients (63.5% of children) during the period from February 2014 to June 2015. Tab. 3

While those below 12 years of age were 40 out of 73 patients (54.7%) and those younger than 2 years were 26 out of 40 children (65%) of cases during the period from February 2013 to June 2014 which is comparable to the results mentioned above. Tab.4

Table 1. Percentage of patients with cutaneous leishmaniasis per month during 2014-2015.

Month	Sept	Oct	Nov	Dec	Jan	Feb	Mar	April	May	June
No.of patient	13	18	14	10	26	32	13	18	14	12
%	7.6	10.5	8.2	5.8	15.2	18.8	7.6	10.5	8.2	7

Table 2. Percentage of patients with cutaneous leishmaniasis per month during 2013-2014.

Month	Sept	Oct	Nov	Dec	Jan	Feb	Mar	April	May	June
No.of patient	6	7	5	4	10	15	7	7	6	6
%	8.2	9.5	6.8	5.4	13.6	20.5	9.5	9.5	8.2	8.2

Table 3 Number of patients with cutaneous leishmaniasis according to the age from September 2014 to June 2015.

Age in years	Number of patients	%
Less than 2 years	54	31.76
2-12 years	85	50
More than 12 years	31	18.23
Total number of patients	170	100

Table 4 Number of patients with cutaneous leishmaniasis according to the age from September 2013 to June 2014

Age in years	Number of patients	%
Less than 2 years	26	35.61
2-12 years	40	54.79
More than 12 years	7	9.58
Total number of patients	73	100

Discussion

Leishmaniasis is an endemic disease in Iraq and the World Health Organization has classified leishmaniasis as a category 1 disease (emerging and uncontrolled), there are many incriminated factors among which wars, global warming, deforestation and cessation of malaria spraying leading to an increased sand fly population [12], all these factors are applicable as a probably direct cause for an increasing number of cutaneous leishmaniasis

among our out patient clinic especially among those who are immigrants who live in crowded and unhealthy environment in refugee camps due to war and terrorism which was most evident at June 2014 and thereafter.

The increasing number of patients with cutaneous leishmaniasis had been noted at September 2014 due to the short incubation period of moist type cutaneous leishmaniasis [7, 12].

It has been noted that most of immigrants presented with secondary bacterial infection probably due to unhealthy and unhygienic environment in which they forced to live because of war circumstances, although more elaborate and detailed study is needed with confirmation by swab to identify the type of bacteria isolated from such cases.

The peak incidence of the disease was during February which had been similarly documented in a previous study in Iraq [15].

This study showed that children are affected most often, because immunity is acquired from the initial infection and deliberate inoculation on the thigh is practiced sometimes so that scarring on the face may be avoided [2].

Prevention includes promotion of personal protective measures through the use of protective clothing, insect repellent containing 30-35% Deet ; permethrin- treated bed nets and clothing [12] is recommended to control the disease in addition to the use of effective programs to control the sandflies, because house spray is of limited value [5].

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