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Epidemiology of Cutaneous Leishmaniasis in Najaf Province, Iraq

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Abstract

Cutaneous leishmaniasis is one of the skin diseases that infect humans due to exposure to more than 20 types of leishmaniasis, and it is one of the diseases that burdened many developing countries, and it is an epidemic disease in more than 98 countries. Therefore, we did this study that included Forty patients with cutaneous leishmaniasis (22 males and 18 females with a ratio of (1.20:1) attending the outpatient clinic of the dermatology unit in Al-Sadder Medical City and private clinics in Najaf / Iraq, during the period between February and April 2019. The age distribution ranges from (1) to (80) years. The diagnosis was done by physical examination. The results clarified the highest rate of infection was in the (11-20) years. The study also demonstrated the effect of gender and area of residence on the spread of infection, as it recorded a significant increase ($P<0.05$) an infection in males compared with females (55%, 45%) respectively and rural regions (47.8%) in comparison to urban regions (18.8%).

Keywords: Cutaneous Leishmaniasis and Prevalence

Introduction

Leishmaniasis constitutes a global health problem, caused by a protozoan parasite belonging to the genus Leishmania.it transmitted by vectors-borne and may live and double in humans, rodents, and dogs [1]. In parasitic diseases, females are less affected than males [2, 3]. Therefore, many factors must be taken to determine the clear gender bias in infection and disease, for example, differences in cultural and social behavior between females and males in developing countries compared to industrialized countries contribute to the spread of parasitic infections in developing countries [4, 5].

The clinical characteristics of the disease depend on the type of leishmaniasis and the immune response of the host, and they include visceral leishmaniasis, which is the lethal form, cutaneous leishmaniasis is in the shape of a skin infection. Produce disfiguring and destructive lesions of a face that may not vanish from the skin if untreated for a long period [6] and mucocutaneous leishmaniasis**.**Cutaneous and visceral leishmaniasis are endemic in different parts of Iraq [7]. Previous studies recorded that cutaneous leishmaniasis was mainly endemic in the northern part of the country such as Salah al-Din, Kirkuk, and Wasit. Thousands of cutaneous leishmaniasis cases were reported among the ranks of the US military in Iraq and Afghanistan [8].

The disruption systems of health in the endemic regions cause the increased burden of leishmaniasis [9]. The major cause of this disease is poor housing, illiteracy, poverty, displacement, malnutrition, gender difference, and the littleness of the immune system [10]. Leishmaniasis is layout in 88 countries, specifically in developing countries [11]. Iraq is one of the major endemic regions in which the prevalence of leishmaniasis [12]. Leishmaniasis is reached to humans through the bite of a sand fly [13]. seldom, hit is transmitted by transfusion of blood or from mother to embryo through pregnancy [14].

Leishmaniasis may weaken many people and avoid them from living a kind life and avoiding work duly [15]. It is becoming more widespread worldwide because of vector distribution and urbanization. lately, several studies talk about the role of moving between endemic and non-endemic regions and the likelihood of production hybrid of new Leishmania [16]. The aim of study was to investigate CL in Najaf Province/Iraq, sample subjects' personal information like age, gender, and location.

Materials and Methods

A total of 40 cases of cutaneous leishmaniasis were selected from endemic areas during the period between February to April 2019 in the out-patient clinics of the dermatology unit in Al-Sadder Medical City and private clinics in Najaf province. Patients were clinically diagnosed by dermatologists.

Results

1. Cutaneous Leishmaniasis According to Gender

The result showed that the infection in males were 22 (55%) more frequent than females 18 (45%). There is no significant differences in comparison to female (P>0.05) (Fig 1).

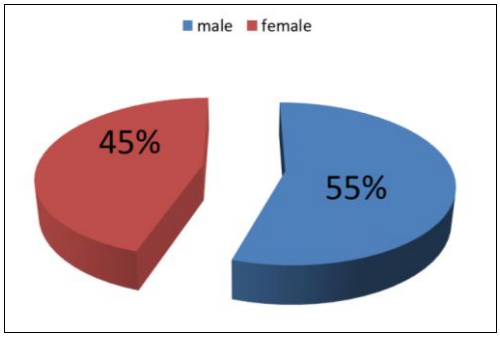

Fig 1: Distributions of Cutaneous leishmaniasis patients according to gender

2. Cutaneous Leishmaniasis Patients According to Age

The result showed that the infection included the ages ranging between 1-80 years old. The highest rate of infection was in the age group 11-20 years while the lowest rate was in the 30-80 years age group. There was a significant increase (P<0.05) in infection of 11-20 years age group in comparison to other age groups (Table 1).

Table 1: Distributions of Cutaneous leishmaniasis patients according to age in Najaf province/Iraq

Age group	Male%	Female%	Total%
1-10	4(10%)	4(10%)	8(20%)
11-20	11(27.5%)	9(22.5%)	20(50%)
21-30	4(10%)	3(7.5%)	7(17.5)
31-80	3(7.5%)	2(5%)	5(12.5)
Total	22(55%)	18(45%)	40(100%)

3. Cutaneous leishmaniasis patients according to Geographical Distribution

There was a significant increase (P<0.05) in infection in rural regions (47.8 %) in comparison to urban regions (18.8 %) (Fig 2).

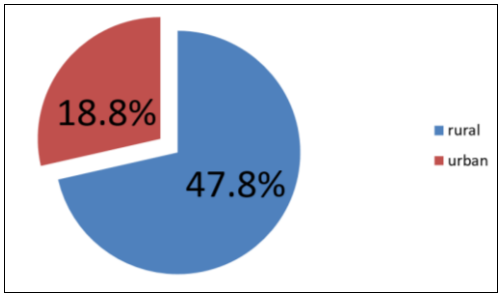

Fig 2: Geographical distributions of Cutaneous leishmaniasis in Najaf province/Iraq

Discussion

The results showed that (55%) of patients infected with CL were males and 45% were females; this is possibly due to additional exposure of males to infected vectors while working or sleeping in open areas (roofs of houses) with less coverage of skin [8] and also their behavior in the environment [17]. Some studies have hypothesized that sex differences observed in some parasitic diseases can be attributed to hormonal effects [9]. Previous studies in Iraq also found that male infections with CL was more than females [18, 19, 20, 21, 22, 23] in Baghdad, Tikrit, Al-Qadisiya, Al-Haweja and Al-Muthana. In Iran, similar results were found [24]. Other studies found that the rate of infection in females was higher than males [25, 26, 27]; these differences may be explained by the fact that females compromised the majority workers in the farms. The results has also shown that the incidence of CL in rural regions was 47.8% which is higher than in urban regions (18.8%). The higher prevalence of the disease in rural regions, which include agricultural areas and thus there is more exposure to vectors and the reservoirs. This makes humans more liable for exposure to causative agents in this endemic area. There are many factors that play an important role in the presence and distribution of CL lesions in rural areas including the presence of animals, which are the reservoirs of the disease, especially rodents and dogs [28] and [22]. The results are agreed with [29] and [30] in Iraq; however, different results were found by [31] and [32]. The highest rate of CL infections was among 11-20 years age group and the lowest rate was in the 31-80 years age group; the reason for this difference is that the 31-80 age group may have developed resistance and immunity against CL due to their previous exposure [33]; these results was agreed with [21] in Al-Qadisiya province which showed that most infections with CL were in age group less than 20 years. In Iran [34] also showed that the age group under 20 years are the highest infected group.

Conclusion

We concluded from the current study that the infection of cutaneous leishmaniasis is more prevalent among males compared to females and that residents of rural areas are more susceptible to infection than residents of urban areas, and the infection occurs in all age groups.

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