

A Retrospective study on the dynamics of the clinical and Demographical evolution of Cutaneous Leishmaniasis in the Yazd province, Iran

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Abstract

Leishmaniasis is considered as an important health problem in the world. Cutaneous Leishmaniasis is epidemic in all of places of Iran, this disease begins as small swells and then they gradually grow and turn into wounds. Since the epidemiological study of this problem is effective in preventing and controlling it. The current research was conducted to study the epidemiological study of Cutaneous Leishmaniasis in Yazd province during the past 5(2014-2018) years. This cross-sectional study has been conducted on registered information and documents of the patients having problem in Yazd province remedial and health care centers over the past 5 years. First, the registered demographic and epidemiological data of the patients were extracted and then they were analyzed by using SPSS 18 software with chi-square test and descriptive statistics. 897 patients included 457 males (51.06%) and 439 females (48.94%). The majority of the patients were between nine 20-29 years old and the minority of them were over the range of 5-9 years old. Most lesions were on the hand and leg of the patients. It was also found that there was a significant relationship between age groups and types of Leishmaniasis ($P < 0.05$) as well as gender and type Leishmaniasis ($P < 0.05$). According to our study, there has been an ascending trend in disease frequency in Yazd province from 2014 to 2018. This increase in diseases due to lack of health and educational status of the people-is also a lack of personal hygiene.

Keywords: Frequency, Cutaneous Leishmaniasis, Epidemiology, Yazd.

INTRODUCTION

Leishmaniasis is an infectious disease that the World Health Organization estimates, 10% of the world's population are at risk for Leishmaniasis. Prevalence of disease is 12 million people and its incidence is 2 to 1.5 million. Disease has been reported from more than 98 countries, mostly developing countries (77 countries). The Cutaneous form is more common than other types (visceral and mucous -cutaneous), so that each year nearly 70 percent of all reported new cases of is Cutaneous Leishmaniasis. 90% of cases of Cutaneous Leishmaniasis are in Iran, Afghanistan, Saudi Arabia, Syria, Brazil and Peru. Leishmaniasis is a disease transmitted by arthropods, which is

one of the major health problems in the world, especially in Iran [2]. Annually more than 20,000 new cases reported in Iran. Leishmaniasis in 17 endemic provinces, including Isfahan, Yazd, Khorasan Razavi, Kerman, Ilam, Fars and Golestan [3-4]. Cutaneous Leishmaniasis caused by a protozoan called Leishmania the Kinoplastida class that in terms of their living environment can be seen in two forms without flagella (amastigotes) and flagellate (promastigotes). Host species of this disease is insects called sand flies of the genus Phlebotomus. Cutaneous leishmaniasis are classified as in Anthroponotic (dry) and Zoonotic (wet) forms, Leishmania major and Leishmania tropica are causes of them respectively [5]. Clinical form of Cutaneous Leishmaniasis can include centered auto- limiting skin lesions or nodules to the metastasis and

expanding form.

MATERIALS AND METHODS

This descriptive-analytical study was conducted on the Cutaneous Leishmaniasis victims who had visited health centers of Yazd since the beginning of April 2014 to the end of March 2018. The required information such as the patient's national origin, age, sex, duration of disease, illness, duration of treatment, the diagnosis, geographic region, scars, patient's job and the city or village where the patient has traveled over the past year were extracted and analyzed. Moreover, the patients' demographic data were analyzed via SPSS software using Chi-square test. Information required includes to the extraction and analysis of was. Patients' demographic data with SPSS software using Chi-square test was performed.

RESULTS

The information of 897 victims with Cutaneous Leishmaniasis who were treated in health centers of Yazd since the beginning of April 2014 to March 2018, were collected. According to obtained information, frequency of both types of Cutaneous

Leishmaniasis based on the year is presented in Figure 1, which, according to 5-year-old study, the highest incidence of Cutaneous Leishmaniasis was in 2014 and the lowest was 2018. The highest rates of infection were in autumn and the lowest was in winter (Figure 1).

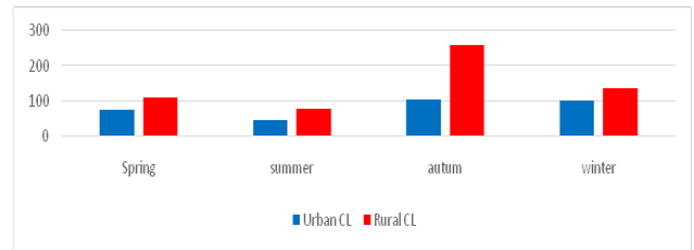


Figure 1: The infection rate to Cutaneous Leishmaniasis based on season by 2014-2018 years.

The demographic data of patients with Cutaneous Leishmaniasis showed according to Year, Season, Gender, Age and Nationality by 2014-2018 years (Table 1).

Table 1: The infection rate to Cutaneous Leishmaniasis based on Year, Season, Gender, Age and Nationality by 2014-2018 years.

Variables		Cutaneous Leishmaniasis		Total	P-value
		Urban CL	Rural CL		
Year	2014	107(77%)	32(23%)	139(100%)	<0.001
	2015	137(77.8%)	39(22.2%)	176(100%)	
	2016	110(57.3%)	82(42.7%)	192(100%)	
	2017	146(62.9%)	86(37.1%)	232(100%)	
	2018	75(47.5%)	83(52.5%)	158(100%)	
Season	Spring	108(59.3%)	74(40.7%)	182(100%)	0.001
	Summer	75(62.5%)	45(37.5%)	120(100%)	
	Autumn	120(33.34%)	220(66.66%)	360(100%)	
	Winter	105(44.68%)	130(55.32%)	235(100%)	
Gender	Male	314(68.7%)	143(31.3%)	457(100%)	0.003
	Female	200(68.34%)	139(31.66%)	439(100%)	
Age	<15			175(100%)	0.072
	15-30			262(100%)	
	30-45			186(100%)	
	45-60			163(100%)	
	>60			111(100%)	
Nationality				778(100%)	
				119(100%)	

The highest rates of infection were in 2010 and the lowest was in 2014(Figure 2).

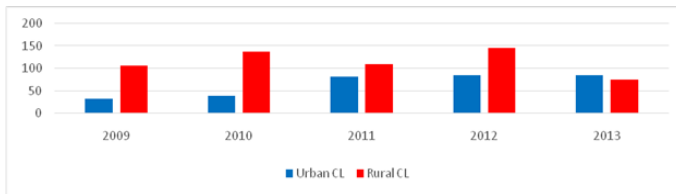


Figure 2: The infection rate to Cutaneous Leishmaniasis based on the type of disease by 2009-2018 years.

According to the results, most lesions were in the hands and feet (83.1%) and the head and face (9-10%) and both (6%) respectively (Table 2).

Table 2: The frequency and percentage of site of lesions

Site Of Lesion	Distribution	
	Frequency	Percentage
Head and Face	98	10.9
Hands and feet	745	83.1
both	54	6.0

The results revealed that Glucantime drug is the most used therapeutic protocol for victims in Yazd (Figure 3).

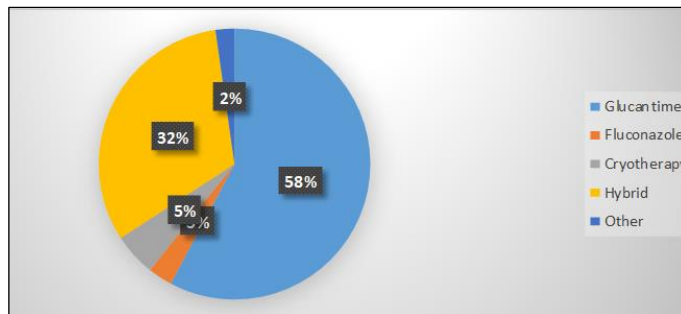


Figure 3: Percentage of the different therapeutic methods.

Table 3: Frequency distribution of Cutaneous Leishmaniasis based on geographic area

Geographic Area	Type of Leishmaniasis			
	Zoonotic		Anthroponotic	
	No	Percentage	No	Percentage
Center	113	67.3	55	32.7
East	73	59.8	49	40.2
West	39	76.5	12	23.5
South	56	68.3	26	31.7
North	294	62.0	180	38.0
Total	575	64.1	322	35.9

DISCUSSION

It has utmost importance, since epidemiological and ecological studies that examined risk factors in the spread of disease, as a

result, the make more effective the control and prevention activities. Since in controlling the diseases transmitted by insects, comprehensive epidemiological and ecological information about their disease, geographical distribution, seasonal abundance and their association with factors such as age, sex, history of travel to endemic areas, etc., must be collected. It should be noted that without this information in one area cannot be accomplished policies and control measures. According to location and climate of Yazd city that is susceptible to an outbreak of Cutaneous Leishmaniasis, which every year a significant number of these people referred to health centers of Yazd city. The main aim of this study was to review Cutaneous Leishmaniasis in the city of Yazd. Study of Demographic characteristics such as age, sex, nationality are other objectives of the study. Among 897 cases referred to health centers in Yazd during the years 2014 till 2018 that suspected to Cutaneous Leishmaniasis, affection of 896 persons to Cutaneous Leishmaniasis was confirmed. The results revealed that, due to ecological situation of city, the prevalence of disease in Yazd is high. Despite modernization in different urban areas, because of the old and non-residential houses in these areas can be place of growth and living rodents that can play the tank role. The results revealed that the most cases of Cutaneous Leishmaniasis is related to north of the city of Yazd, which mentioned region have the old context and wasteland.

Tashrifi *et al.* in the review of all patients with suspicious lesions to health center in the first seven months of 1390 in Esfarāyen found, on 154 cases of Cutaneous Leishmaniasis in 1390 sexually among which 84 (54%) were female and 70 (46%) were men and in terms of location 130 (95%) of them in the village, 24 (15%) of them dwelt in the city among which 7 relapsed cases (4.5%) in the meantime, and 146 patients (94%) new cases and one case (0.6%) were treatment failures. In only 18 cases (11.6%) co-infection with other family members was reported. In terms of age distribution of the patients, 76 (49%) were under 10 years, 22 (14.2%) between 10 to 20 years and 16 (10.3%) between 20 to 30 years and 18 (11.6%) between 30 to 40 years and 11 (7.1%) between 40 to 50 years, 11 patients (7.1%) were above 50 years. In regard with occupation, 41.5% were children, 14.2% were housewives, 2.5% were rancher, 19.4 were students, 1.9% was farmers and 9% were in other professions. 149 (97.5%) have Zoonotic Cutaneous Leishmaniasis and 4 (2.5%) have Anthroponotic Cutaneous Leishmaniasis altogether [6- 8]. In Jamshidi *et al.* study in 1384 with a review of Cutaneous Leishmaniasis in rural Abarkouh, 20 villages of Abarkouh city with a population of over 15515 people and 3456 households with cluster sampling, 20 clusters that each cluster has 15, contains 300 households were selected for review then questionnaires were completed after examination of households.

CONCLUSION

Based on results of this study, the prevalence of rural Zoonotic Cutaneous Leishmaniasis in Yazd is more than urban Cutaneous Leishmaniasis and also due to the increasing prevalence of urban Cutaneous Leishmaniasis over years 2014 to 2018, this requires measures to prevent and fight against the vector and reservoir.

Conflict of Interest

We declare that we have no conflict of interest.

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