Cutaneous leishmaniasis in the Libyan Arab Jamahiriya: a study of the Yafran area

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Abstract We studied 445 cases of cutaneous leishmaniasis in the Yafran area during the period February 1991 to December 1992. The highest incidence rates were recorded at the end of the transmission seasons in two peaks, one in November 1991 and the second in December 1992. The ratio of infected males to females was 1.85:1.00. The highest rate of infection was found among people 11–20 years of age. This indicates that the disease is not new in the Yafran area.

La leishmaniose cutanée en Jamahiriya arabe libyenne: une étude de la région de Yafran


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Introduction

Cutaneous leishmaniasis (CL) is widespread in the north-western region of the Libyan Arab Jamahiriya. The first two cases of CL were recorded in 1930 [1]. Another 40 cases have been recorded in Nalut near the Tunisian border [2]. Several CL cases have been recorded west and southwest of Tripoli among residents and new settlers in towns, villages and agricultural projects [3,4].

Yafran is a town of about 3000 residents situated south-west of Tripoli near the western mountain range of Jabal Nafusa. It is located in semi-arid highland about 550 metres above sea level. Olive trees, fig trees and wild aromatic herbs grow in the area. The average annual rainfall is about 90 mm and the monthly average temperature ranges from 6 °C in January to 42 °C in July, when the humidity level reaches 80%. We studied the incidence of CL over the period February 1991 to December 1992 in the Yafran area.

Patients and methods

Patients suspected of having CL were examined by dermatologists at Yafran Hospital. Smears from the edge of the lesions were confirmed microscopically. Positive cases were treated with sodium stibogluconate (0.1 mL/kg body weight) daily for 6–10 days.

Results

A total of 445 CL cases were recorded during the period from February 1991 to December 1992. Figure 1 shows monthly records indicating that by February 1991, the disease was already at, or past, peak incidence. The number of cases declined to the lowest level during the study period in May 1991, and then increased to reach the first peak in November 1991. The number of cases then dropped dramatically in April 1992, and then increased to reach another peak in December 1992.

Figure 1 Recorded cases of cutaneous leishmaniasis in the Yafran area during the period from February 1991 to December 1992
Table 1  Sex and age group distribution of cutaneous leishmaniasis in the Yafran area

<table>
<thead>
<tr>
<th>Age group (years)</th>
<th>Males</th>
<th>Females</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;1</td>
<td>2</td>
<td>3</td>
<td>5</td>
<td>1.1</td>
</tr>
<tr>
<td>1-10</td>
<td>59</td>
<td>35</td>
<td>94</td>
<td>21.1</td>
</tr>
<tr>
<td>11-20</td>
<td>74</td>
<td>40</td>
<td>114</td>
<td>25.6</td>
</tr>
<tr>
<td>21-30</td>
<td>75</td>
<td>32</td>
<td>107</td>
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<td>31-40</td>
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<td>16</td>
<td>61</td>
<td>13.7</td>
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<tr>
<td>41-50</td>
<td>14</td>
<td>11</td>
<td>25</td>
<td>5.6</td>
</tr>
<tr>
<td>51-60</td>
<td>13</td>
<td>12</td>
<td>25</td>
<td>5.6</td>
</tr>
<tr>
<td>61-70</td>
<td>4</td>
<td>5</td>
<td>9</td>
<td>2.0</td>
</tr>
<tr>
<td>71-80</td>
<td>9</td>
<td>1</td>
<td>4</td>
<td>0.9</td>
</tr>
<tr>
<td>81-90</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0.2</td>
</tr>
<tr>
<td>Total</td>
<td>289</td>
<td>156</td>
<td>445</td>
<td></td>
</tr>
</tbody>
</table>

The age distribution of CL cases is shown in Table 1. There were 289 (64.9%) males affected and 156 (35.1%) females ($\chi^2 = 39.8, P < 0.001$). The ratio of males to females was 1.85:1.00. There were 114 cases (25.6%) of CL among people aged 11–20 years, followed by those aged 21–30 years (24.0%) and those aged 1–10 years (21.1%). The differences between the age groups were significant ($\chi^2 = 341, P < 0.001$).

Sandfly species were collected in the Yafran area. Phlebotomus papatasi was the most common species found, followed by P. sergenti. Wild rodents including Meriones libycus, M. shawi and Gerbillus gerbillus have been found in the studied area and are possible animal reservoirs.

**Discussion**

CL is an endemic disease in the north-western part of the country [3–5]. The high rate of infection among younger age groups indicates that this disease is not a new occurrence in Yafran. Elderly individuals may have been infected in the past and have developed immunity against reinfection. In this area of the country, younger age groups are at great risk of acquiring CL.

The higher incidence of infection among males in the younger age groups may be due to two factors. First, women do not seek medical advice and tend to have fewer activities outside their homes. Men have a habit of sleeping outside their homes during hot nights where they may be more prone to infection.

*P. papatasi* is the proven vector for Leishmania major in Tunisia, Egypt and the Libyan Arab Jamahiriya [6–8]. *M. libycus* and *M. shawi* have been found to be infected with *L. major* in endemic areas in the north-western region of the country [3,9,10].

**References**

1. Onorato R. Lo stato attuale delle nostre conoscenze sulla nosografia Tripolitana. [The current state of our knowledge of the nosography of Tripoli.] Archivio Italiano di scienze mediche Tripoli e coloniale, 1931, 12:137–86.


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