Evidence Of Leishmaniasis In Nepal

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Introduction:

Leishmaniasis is a parasitic zoonosis. Almost all forms of leishmaniasis are zoonosis. There are two types of leishmaniasis — one cutaneous leishmaniasis and other visceral leishmaniasis. Both types are caused by a flagellate protozoan of the genus Leishmania which occur in vertebrate reservoir animals, including man, in the aflagellate form (leishmanial) of amastigote form, while in the vector insects Phlebotomus spp. it has the flagellate (leptomonad) or promastigote form.

Visceral leishmaniasis, which is also called kala-azar or dum dum fever or infantile splenic fever, is caused by Leishmania donovani which is a viscerotropic flagellated protozoan.

Cutaneous leishmaniasis of oriental sore, or Aleppoboil is caused i.e. L. mexicana, mexicana, and L. brasiliensis brasiliensis. L. Peruviana. L. tropica major, and L. tropica minor (Fifth Annual on TDR 1981).

Disease Distribution in man and Animals:

Cutaneous and visceral leishmaniasis in humans and animals occur in the Americas from southern Mexico to northern, Argentina, Asia the Middle East, the Mediterranean coast and Africa. On a global basis this is prevalent but very poorly reported and generally underestimated. (Acha et al 1980).

In Nepal this disease is prevalent both in human and animals but it is very poorly

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reported and underestimated. Stray cases of Kala-azar are occurring in Siraha, Dhanusha, Mahotari, Banke and Kailali districts of Nepal. There is one case diagnosed clinically as well as laboratorially in Kanti Hospital, Kathmandu (Shrestha 1982). This calls for active epidemiological surveillance to prevent this disease situation in Nepal. Sandflies (Phlebotomus spp.) which transmit this disease from animal to man are also present in the endemic districts of Nepal.

In India both types of leishmaniasis is present in Assam, Bihar, U.P., Rajasthan, West Bengal and areas of river Ganga. In Bihar this disease is existing since 1933. From 1970 onwards cases of Kala-azar started reappearing in Bihar and in 1977 the estimated cases reached about 100,000 with approximately 4500 deaths. From 1980-82 this disease appeared more severely in many districts of Bihar which are adjacent to Siraha, Dhanusna Mahotari & Saptari districts (Sanyal et al 1979). The investigations revealed the first presence of a zoonotic focus of cutaneous leishmaniasis in Bikaner district of Rajasthan in 1973 (Sharma et al 1973 and Mohan Krishna et al 1973).

Epidemiological Transmission Cycle:

The reservoirs of visceral leishmaniasis (Kala-azar) are dogs and other canine species and to a lesser extent man himself. The infection phlebotomine insects (sandflies). Then the infected sandfly bites man and transmits the disease. Occasionally transmission is from man to man by the bites of sandfly. (see Figure 1).

The reservoirs of cutaneous leishmaniasis are wild animals particularly rodents. The infection in transmitted from one animal to another by phlebotomine flies of the genus Lutzomyia. Man is infected accidentaly by the bites of these flies when he enters enzootic areas in the forest (See Figure 2).

In Dhanusha district, Nepal Malaria Eradication office has collected sandflies during the year 1982 when there was an out-break of Kala - azar in the area. But no detail study has been carried out. Sandflies (Phlebotomus argentipes) are important vector of Kala-azar in Bihar, India which is abordered with Dhanusha district of Nepal.

Reported Cases of Kala-azar In Nepal:

Cases of Kala-azar started being reported and admitted from 1981 onwards from
Janakpur Zonal Hospital, Dhanusha. In that year 1981 there were 5 cases clinically confirmed and treated in the hospital, and in 1982 there were 32 cases reported and 7 hospitalized (See Table 1). Besides many patients went to India for treatment. Clinical cases of Kala-azar were also reported from Siraha, Saptari, Mahotari, Banke, Kailali and Kanti Hospital in different years.

Zoonotic Diseases Control Section, Epidemiology and Statistics Division of the Department of Health Services was asked to do some epidemiological survey of this disease in that area. Then the project proposed has been prepared and approved by Nepal Medical Research Committee, Ministry of Health for implementation. The project has been sent to TDR Division WHO/HQ, Geneva. Preliminary epidemiological survey has been already started now by this section.

Acknowledgement:

The author would like to thank Dr. Pitambar Jha, then Civil Surgeon of Janakpur Zonal Hospital for his kind cooperation and help.

Figure 1

Epidemiological Transmission Cycle of visceral Leishmaniasis (Kala azar).

\[ \text{Dog} \rightarrow \text{Vector} \rightarrow \text{Susceptible} \]

\[ \text{Infected} \rightarrow \text{Sandfly} \]

\[ \downarrow \]

\[ \text{Phlebotomus} \]

\[ \text{MAN} \leftrightarrow \text{Vector} \rightarrow \text{MAN} \]

Figure 2

Epidemiological Transmission Cycle of Cutaneous Leishmaniasis

\[ \text{Infected rice rat and wild animals} \rightarrow \text{Phlebotomus} \rightarrow \text{Susceptible rodents and wild animals} \]

\[ \rightarrow \text{Vector} \rightarrow \text{Sandfly} \]

\[ \downarrow \]

\[ \text{MAN} \]
Table 1

Clinical Cases of Kala-azar Admitted in Janakpur
Zonal Hospital, Dhanusha (1981-1982)

<table>
<thead>
<tr>
<th>Cases No.</th>
<th>Age</th>
<th>Sex</th>
<th>Address</th>
<th>Cured</th>
<th>Death</th>
</tr>
</thead>
<tbody>
<tr>
<td>01.</td>
<td>12</td>
<td>F</td>
<td>Kapleswar</td>
<td>Cured</td>
<td></td>
</tr>
<tr>
<td>02.</td>
<td>8</td>
<td>M</td>
<td>Kamaalakhooch</td>
<td>Cured</td>
<td></td>
</tr>
<tr>
<td>03.</td>
<td>30</td>
<td>M</td>
<td>Janakpur</td>
<td>Cured</td>
<td></td>
</tr>
<tr>
<td>04.</td>
<td>22</td>
<td>M</td>
<td>Kapleswar</td>
<td>Left hospital without medical advise (LAMA)</td>
<td></td>
</tr>
<tr>
<td>05.</td>
<td>45</td>
<td>M</td>
<td>Janakpur</td>
<td>Cured</td>
<td></td>
</tr>
<tr>
<td>06.</td>
<td>16</td>
<td>F</td>
<td>Bhipan</td>
<td></td>
<td>Died</td>
</tr>
<tr>
<td>07.</td>
<td>5</td>
<td>M</td>
<td>Basantpur</td>
<td>Cured</td>
<td></td>
</tr>
<tr>
<td>08.</td>
<td>8</td>
<td>F</td>
<td>Kapleswar</td>
<td>LAMA</td>
<td></td>
</tr>
<tr>
<td>09.</td>
<td>24</td>
<td>F</td>
<td>Handiga</td>
<td>Cured</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>22</td>
<td>F</td>
<td>Bhedra</td>
<td>Cured</td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>10</td>
<td>M</td>
<td>Lahna</td>
<td>Cured</td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>3</td>
<td>F</td>
<td>Bakey</td>
<td>Cured</td>
<td></td>
</tr>
</tbody>
</table>

REFERENCES


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