

# Visceral Leishmaniasis in District Dir, NWFP

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## Abstract

Visceral leishmaniasis is endemic in District Dir, NWFP. We evaluated 10 patients with visceral leishmaniasis at DHQ Hospital Timergara District Dir, N.W.F.P. All patients were in the age range 2 to 10 years. The predominant clinical features in these were chronic fever (10), splenomegaly (10), hepatomegaly (10), weight loss (10) and abdominal distention (5). Lymphadenopathy was absent. Common laboratory abnormalities included anaemia (10), leucopenia (7), thrombocytopenia (10) and hypergammaglobulinaemia (10). Formal Gel test was positive in all patients (100%) and all had positive bone marrow smears for Leishmania Donovanii (L.D.) bodies (10). The response to stibogluconate (Glucantime Sodium) therapy was good with a 100 percent cure rate (JPMA 48:161,1998).

## Introduction

Visceral leishmaniasis, also known as Kala-azar is caused by a protozoa called leishmania donovani<sup>1</sup>. It was named after the discoverers, Leishman from London in May 1903 and Donovan from Madras 1903<sup>2</sup>. It is conveyed to man by the female phlebotomine sand flies where the flagellate (promastigote) forms of leishmania develop<sup>3</sup>. The disease is prevalent in many countries of the world<sup>1</sup>, more so in sub-tropical and tropical areas as Mediterranean, Central Asia, China, Middle East, India, Northern Pakistan, Africa and South as well as Central America<sup>4,5</sup>. Multiplication by simple cell division of leishmania takes place in the monocytes and macrophages in various organs of the body<sup>6</sup>. The spleen is massively enlarged<sup>7</sup>. There is involvement of the bone marrow, resulting in granulocytopenia, thrombocytopenia, anaemia and occasionally pancytopenia may be present<sup>8</sup>. ESR is markedly raised. The incubation period is from 2 months but may be up to 10 years<sup>8</sup>. There is either continuous low grade fever or high grade intermittent rise of temperature, pallor, weakness, emaciation, enlargement of the lymph nodes, distention of abdomen due to massive splenomegaly and chronic ill health are associated features. In neglected cases there may be bleeding from various sites of the body<sup>9</sup>. The diagnosis is based on the demonstration of Leishmania Donovanii (L.D.) bodies in smears obtained from bone marrow, spleen, liver and lymph nodes<sup>10</sup>. In cutaneous Leishmaniasis, the parasites are isolated from the active lesions<sup>11</sup>.

## Patients and Methods

This study was conducted at DHQ Hospital, Timergara, District Dir, NWFP. Patients diagnosed as visceral leishmaniasis, confirmed by identifying Leishmania donovani in bone marrow smears, were included in the study. Each patient had a thorough clinical evaluation. Data recorded included age, sex, history of fever, weight loss, anorexia, nausea, vomiting, diarrhoea, abdominal distension, respiratory symptoms, temperature at presentation, lymphadenopathy, hepatosplenomegaly and skin changes. Investigations performed for each patient were CBC, ESR, platelets count, special smear, formal gel test, smear for malaria parasites (thick and thin films) and urinalysis. Bone marrow aspirates were taken for Leishmania Donovanii bodies. Patients were treated with sodium stibogluconate 15mg/kg daily

for 15 days. Response was assessed by improvement of general condition, weight and anaemia, regression of organomegaly and normality of blood counts. Patients were followed up for three to six months to assess relapses.

## Results

Ten patients, 7 males and 3 females, with visceral leishmaniasis were admitted to DHQ Hospital, Timergara, District Dir, from May 1996 to November, 1997. The ages ranged between 2 and 10 years. All patients presented with a history of fever for one month or more. Other symptoms included abdominal distension, weight loss and anorexia. Vomiting, diarrhoea and cough were less common. On examination, half of the children were afebrile. Bleeding was present in one patient. The liver and spleen were enlarged in all subjects. Eighty cases had massive splenomegaly (more than 5 cm below the costal margin). The main clinical features are shown in the Table.

**Table. Frequency of clinical features in 10 patients with visceral leishmaniasis.**

Symptoms/signs	No. of patients
Fever	10
Weight loss	10
Abdominal distension	5
Cough	2
Diarrhoea	2
Hepatomegaly	10
Splenomegaly	10
Bleeding	1

All the patients were anaemic with Hb <70%. Total leucocyte count was less than  $4 \times 10^9/L$  in 70% of patients and polymorphonuclear cells were less than  $3 \times 10^9/L$  in all the cases. Lymphocytic count was normal in majority of patients. Platelets were less than  $100 \times 10^9/L$ , formal gel test was positive and bone marrow smears for Leishmania Donovani bodies were positive in all the patients. Response to sodium stibogluconate therapy was excellent with a cure rate of 100 percent. Fever subsided within the first week and hepatosplenomegaly regressed gradually. No relapses were seen, during the six months follow-up.

## Discussion

Visceral leishmaniasis is prevalent in Pakistan and affects predominantly infants and young children<sup>4</sup>. The main clinical features seen among our patients were fever, weight loss, anorexia, abdominal distension and hepatosplenomegaly. Lymphadenopathy was rare. This is similar to the Indian and Saudi experience<sup>5</sup>. Lymphadenopathy is commonly seen in the African type of the disease<sup>8</sup>. The hematological findings were anaemia, leukopenia and thrombocytopenia. Anaemia is probably due to a combination of iron deficiency, hemolysis and bone marrow suppression (anaemia of chronic disease)<sup>9</sup>. Neutropenia and thrombocytopenia are likely to be due to hypersplenism as they are absent in patients

who have had splenectomy. Fonnal gel test was positive in all patients, but this test is known to have a low specificity. Cross-reactions occur with leprosy, malaria, schistosomiasis and cutaneous leishmaniasis. Definite diagnosis of visceral leishmaniasis depends on demonstration of amastigotes in bone marrow, spleen, liver, lymph nodes<sup>10</sup> and in the case of cutaneous leishmaniasis in active lesions<sup>11</sup>. These results are comparable to those reported in the literature<sup>4,10</sup>. The response to sodium stibogluconate in our series was excellent. This is similar to another Pakistani experience<sup>4</sup>. The Indian variety of the disease also responds well to therapy<sup>4</sup>. Visceral leishmaniasis in Africa seems to be less responsive<sup>5</sup>. Patients who do not respond to the initial course of antimony may respond to a second or even a third course<sup>1</sup>.

In many ways, visceral leishmaniasis in Pakistan bears many clinical similarities to the Indian and Mediterranean type of the disease. All are known to have good response to therapy<sup>4</sup>. Visceral leishmaniasis is endemic in District Dir, NWFP. It is simple to diagnose if the physician has a high degree of suspicion. The symptoms are typical and the laboratory tests are easy to perform and inexpensive. The response to therapy is excellent with a 100 percent cure rate. Left untreated visceral Leishmaniasis can prove to be fatal.

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