# CLINICAL PRESENTATION AND MANAGEMENT OF VISCERAL LEISHMANIASIS

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**Background:** Febrile illnesses like malaria, typhoid, and tuberculosis are the commonest problems in our area, but visceral leishmaniasis (VL) is also one of the diseases presenting with fever in this part of the country. This study was conducted to evaluate its clinical spectrum and way of management. **Methods:** This study was conducted in Paediatric Department of Women and Children Hospital and Ayub Teaching Hospital, Abbottabad from October 1985 to August 1999 during which 70 cases of VL were diagnosed and managed. **Results:** All patients were below 10 years of age and were from Hazara division. Majority of them were from two specific localities, one in Abbottabad District (43%) and the other in Mansehra District (14%). Common clinical features were Fever 99%, Splenomegaly (99%), Anaemia (96%), Hepatomegaly (86%), distension of abdomen (47%) and bleeding diathesis 14%. Haemoglobin was below 7.9 gm in 82.86%, white cell count was below 4000/$mm^3$ in 42.85%, Platelet count was below 100000/$mm^3$ in 67.14% and ESR was >50 mm at the end of first hour in 86% of the patients. All the patients showed Leishmania Donovani bodies in the bone marrow smears except one, where tap was dry and then trephine biopsy was performed to confirm the diagnosis. In 67 cases amastigote form was found and only in 3 patients the promastigotes were found. Fifty two patients had received meglumine antimoniate (glucantime) and 18 received sodium stibogluconate (pentostam) along with supportive therapy. Mortality was 11.43%. **Conclusions:** The disease is gradually spreading southwards in the country. Children below 5 years are mainly affected. Bone marrow examination is the most reliable and simple method of diagnosis. A high index of suspicion must he kept in mind for all febrile cases coming from Hazara division, Northern areas, Azad Kashmir.

**Keywords:** Leishmaniasis, Visceral Leishmaniasis, Febrile Illness

## INTRODUCTION

Visceral Leishmaniasis (VL) or Kala-azar is a systemic disease caused by a protozoa "The Leishmania Donovani", There are 20 different species of Leishmania, 12 of which can cause Leishmaniasis.

Its vector is female sandfly. In old world it was genus phlebotomus and in new world it is genus lutzomyia. In Pakistan the vector are ph. argentipes & burneyi. The disease has presented unexpectedly in immunosuppressed patients e.g. after renal transplantation, in AIDS patients & in patients treated by immunosuppressive drugs for cancer.[1]

In Pakistan, human visceral Leishmaniasis was first noted in 1960 from Baltistan. Disease is charecterised by fever, hepatosplenomegaly, anaemia, leucopenia and hypergamaglobulinemia. The serious complications of Kala azar are cancrum oris dysentery, pneumonia, anemia, agranulocytosis, jaundice, severe haemorrhage and anasarca. Pulmonary tuberculosis may occur with Kala-azar. Mortality is very high in untreated cases (90%) and high in treated patients (5-30%).[2,3]

Diagnosis is confirmed by splenic puncture, bone marrow aspiration & liver biopsy.

The drug of choice was pentavalent antimonial compounds i.e. sodium stibogluconate (pentostam) and meglumine antimoniate (glucantime). But resistance to these drugs has been reported by WHO.[4]

Supportive measures include correction of anemia, treatment of infection and good nutrition. To assess the response of treatment clinical and parasitological parameters are used. These parameters include apyrexia, decrease in size of spleen, increase in leukocyte count, haemoglobin level and disappearance of parasite in biopsy or aspiration material.

## MATERIAL AND METHODS

This was observational study conducted between October 1985 and August, 1999 in paediatric ward of Women & Children Hospital and Ayub Teaching Hospital Abbottabad.

Suspected patients were admitted in the ward. A detailed history was taken from the parents and thorough clinical examination was performed in each case.

Diagnosis was based upon finding Leishmania Donovani bodies in bone marrow smear. Bone marrow smear negative cases were excluded from the study. A total of 70 cases were included in this study. Out of these 56 cases (80%) were studied from records from Oct 1985 to Aug 1997. the clinical data of these cases including history, physical

findings & treatment schedule was collected and a proforma was filled.

In all the patients in addition to bone marrow smear, peripheral blood smear was also performed.

Each patient was put on antimony compound with a dose of 20mg /kg/day given intramuscularly daily for 4 weeks duration. Each patient was kept in hospital for two weeks after starting treatment to observe clinical improvement and any side effect of the drug. Supportive therapy like high caloric diet, multivitamin & mineral supplements, blood transfusion and antibiotics for bacterial infections were provided. After two weeks patient was sent home with same dose for another two weeks period and with advice to come back after completing treatment.

## RESULTS

During this ambidirectional study seventy cases of VL were diagnosed, 56 cases were collected retrospectively (27-10-85 to 31-08-1997) and 14 prospectively (01-09-1997 to 31-08-1999).

48 (68.56%) patients were males while 22 were females. Thus male to female ratio was 2.2:1. All these cases were below ten years of age (table 1).

Majority of the children were from Abbottabad while the rest belonged to Mansehra, Kohistan, Buttagram, and Haripur district as shown in table 2. The presentations and symptoms in most cases were fever, abdominal distension, and pallor (table 3).

The commonest signs were enlargement of spleen and liver along with anaemia shown Table 4.

**Table-1: Age wise distribution (n=70)**

| Age Group | No. of Patients | % |
|---|---|---|
| < 1 year | 05 | 07.14 |
| 1 – 3 years | 48 | 68.57 |
| 4 – 5 years | 13 | 18.57 |
| 6 – 9 years | 04 | 05.72 |

**Table-2: Area wise Distribution (n=70)**

| Name of District / Area | No. of cases | % age |
|---|---|---|
| Abbottabad | 47 | 67.14 |
| Mansehra | 11 | 15.71 |
| Kohistan | 07 | 10.0 |
| Battagram | 03 | 4.29 |
| Hari Pur | 02 | 2.86 |

## DISCUSSION

This study showed that Visceral Leishmaniasis is more common in males than females. This may be due to greater exposure of male to the vector of the disease. Moreover in our society parents usually bring their male children for treatment and ignore female children. This is in accordance with the studies carried out by other workers in Pakistan All the patients were below 10 years of age and this is in conformity with studies from hilly areas of Pakistan. Majority (68.57%) of the patients were of toddler age group (1-3 years) and the similar age incidence has been reported by other workers.[5,6]

**Table-3: Symptom wise distribution**

| Symptoms | No. of Patients | % age |
|---|---|---|
| **Fever** | 69 | 98.57 |
| **Abdominal Distension** | 33 | 47.14 |
| **Pallor** | 31 | 44.28 |
| **Weight loss** | 30 | 42.86 |
| **Cough** | 24 | 34.28 |
| **Vomiting** | 12 | 17.14 |
| **Epistaxis** | 11 | 15.4 |
| **Blood in stools** | 06 | 8.57 |
| **Bleeding P / R** | 03 | 4.28 |

**Table-4: Clinical Signs (n=70)**

| Signs | No. of Patients | % |
|---|---|---|
| **Splenomegaly** | | |
| Massive (>10cm below costal | 69 | 98.57 |
| margin) | 10 | 14.29 |
| Marked (7-10 cm ) | 18 | 25.72 |
| Moderate (4-6) | 23 | |
| Slight (1-3 cm) | 18 | 25.72 |
| Anaemia | 67 | 95.71 |
| **Hepatomegaly** | | |
| Massive (>10 cm below costal | 60 | 85.71 |
| margin) | 10 | 14.29 |
| Marked (7-10 cm) | 02 | |
| Moderate (4-6 cm) | 17 | 24.29 |
| Slight (1-3 cm) | 40 | |
| Lymphadenopathy | 14 | 20 |
| Signs of pneumonia | 10 | 14.29 |
| Petechial and /or purpura | 09 | 12.86 |
| Puffiness of face, Peripheral Oedema | 08 | 11.43 |
| Cancrum Oris | 01 | 1.43 |

The pattern of disease that occurs in this area, clinically resembles the Mediterranean (Chinese) type as against the Indian Kala-azar in which there is black pigmentation on extremities and trunk. This may be due to the genetic polymorphism of the parasite.[7,8]

The onset was insidious in almost all the cases, the child loosing interest in play and becoming listless. This type of onset has been reported in various studies.[9]

Duration of symptoms was from few weeks to 2 years with an average of six months. Irregular fever was the commonest symptoms and was present in 98.57% of the cases. Similar observations were noted by other workers from different presenting areas of the country since fever is one of the common complaints and after excluding the commonest febrile illnesses like malaria and typhoid visceral

leishmaniasis should be kept in mind by the clinicians.[10, 11]

One of the unusual presentation in these cases was pneumonia which was present in 14.29% of the patients in our study. This finding has not been noted in other studies. The other finding in the present study was related to pancytopenia and is a finding that has been reported in many studies.[12]

Splenomegaly was the most prominent and frequent sign and main cause of protuberant abdomen. It is consistent with various studies done on V.L. in rare cases of acute Kala azar, the spleen may not be palpably enlarged, as it was noted in one of our patients in which spleen was not palpable.

Gastroenteritis, bronchopneumonia, petechial, purpura, ecchymosis and bleeding problems were present in good number of patients. The main cause of petechial and other bleeding problems was thrombocytopenia.

## CONCLUSION

- There is conclusive evidence that visceral Leishmaniasis is gradually spreading southwards in the country.
- A new focus of visceral Leishmaniasis exists in Hazara division
- The disease mainly affects children below 5 years of age.
- Bone marrow examination is the most reliable and simple mean of diagnosing visceral Leishmaniasis in Pakistan.
- Serum proteins are altered in late stages of the diseases and such cases are associated with positive aldehyde test.
- Sodium stibogluconate or meglumine antimoniate along with the supportive treatment is the most useful method of management.
- A high index of suspicion must be kept in mind for all febrile cases coming from Hazara, Northern areas, Azad Kashmir and presenting with requisite clinical picture.

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