



Medical Case Study

NEW CASES OF LEISHMANIASIS VISCERALIS IN SOUTHEAST BULGARIA

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ABSTRACT

Visceral leishmaniasis (VL) is a vector-borne protozoan infection transmitted by Phlebotomine sandflies, the primary hosts of the infective *Leishmania donovani*. In the Mediterranean region VL is caused by *Leishmania infantum*. We studied two VL-infected men (50- and 67-years old) from Stara Zagora region of Bulgaria. Clinical diagnosis was based on the clinical signs of visceral leishmaniasis such as splenomegaly, hepatomegaly, and high undulating fever. Leishmanial parasites were assayed by light microscopy of bone marrow and anti-*Leishmania infantum* antibodies were looked for via indirect immunofluorescence. Was used Glucantime (*N*-methyl glucamine antimoniate) 20 mg/ for antileishmanial therapy. LV in the older man was complicated and had finished by exitus letalis.

Key Words: leishmaniasis visceralis, splenohepatomegaly, anaemia, undulating fever, Glucantime.

INTRODUCTION

Short historical review, incidence and importance of leishmaniasis among humans

The first credible communicated cases of Kala-azar or visceral leishmaniasis, were reported on Greek islands of Hydra and Spica in 1835 by Roeser. W. Leishman in 1900. Ch. Donovan in 1903 discovered the agent of visceral leishmaniasis in splenic punctate in India. L. Rogers detected flagellar forms of leishmaniae. In 1908, Nicolle proposed that dogs were reservoir hosts of visceral leishmaniasis in the Mediterranean region. According to the World Health Organisation (WHO), over 12 million people from more than 80 countries are infected with leishmaniae. The visceral leishmaniasis, caused by *Leishmania infantum* is seen in most Mediterranean and Middle East countries. In Europe, the disease was sporadically detected in Malta, Portugal,

Spain, Italy, Yugoslavia, Greece, and Bulgaria. The first case of visceral leishmaniasis in Bulgaria was described by V. Mollov in 1921. From 1988 to 2004, 83 clinical cases have been reported, including a case in a 4-month old baby. The nosogeographical prevalence of VL was accentuated – mainly in South Bulgaria, the morbidity rate in the region of Stara Zagora being 50.7% [1, 2, 3, 4].

The Mediterranean clinical geographical variety of visceral leishmaniasis is a transmissible zoonosis, with dogs and Canidae family representatives being the main reservoirs in Bulgaria. In them, the disease occurs in a generalized form [5]. It is transmitted by vectors from the *Plebothomus* genus. Humans could be involved in the zoonotic cycle of *L. infantum* /zoonanthroponotic cycle/ [6, 7]. *Leishmania infantum* is an obligate intracellular parasite that affects severely the organs of monocytic macrophageal system in man [1, 2, 3, 8, 9, 10, 11].

In this paper we present two patients of the age of 47 and 67 years, living in truly endemic region in South-East Bulgaria, that have not travelled abroad, and therefore,

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allowed us to classify the cases as autochthonic. An epizootological study and serological screening of canine populations in the epidemic foci were performed. In one patient, the visceral leishmaniasis was manifested on the background of a good general condition without history of past or accompanying diseases. In the other patient, the disease was manifested after operation of a benign mediastinal growth and ended lethally.

DESCRIPTION OF CLINICAL CASES

Case 1

D. G. D. was a 50-years old man from Yambol. The complaints began from the beginning of February – intermittent fever paroxysms up to 38.8°C, profuse sweating, weight reduction up to 10 kg, asthenoadynamia, anorexia. An axillary bilateral lymphadenitis, enlarged spleen by 6 cm and liver by 4 cm were seen. The haematological deviations were erythropenia, lymphopenia and increased erythrocyte sedimentation rate. After a prolonged diagnostic investigation and sternal puncture (performed in April), intra- and extracellularly located amastigote forms of *Leishmania infantum* were found on Romanosvski/Giemsa-stained smear. The serological study yielded a borderline result. The aetiological treatment consisted in Glucantime administration (20 mg/kg, i.m) [12, 10, 13]. The temperature returned to the normal range (about the 10th day), the spleen and liver regained their normal sizes, the general condition improved, the haematological parameters returned to normal. The patient owned a dog that died by the end of 2002. In the region the men lived in (The Tundja riverside) where there were populations of stray dogs.

Case 2

G. S. K. was aged 67 and from Kaloyanovets. He began to complain since September 2004 of the following: pressure in the chest, suffocation, general weakness and discomfort, subfebrile episodes to 37.5°C. Thoracic radiography showed a mediastinal tumour formation of about 15 cm. In October, it was removed and was histopathologically determined as lipoma. By the second post operative day, an intermittent febrility up to 38.7°C appeared. The haemocultures were microbiologically negative. After discharge from the hospital, the state of the patient was characterised by intermittent febrile and afebrile episodes, a dry irritating non-productive cough appeared. The patient was

re-hospitalised in a Treatment ward for diagnoses and treatment. The treatment included broad-spectrum antibiotics and tuberculostatics.

The diagnostic imaging (CT, plain chest radiography, abdominal echography) did not reveal any pathological changes; there were neither data for pathological changes nor clinical laboratory evidence for collagenosis and neoplasia. The microbiological study of uroculture showed a single *Enterococcus* isolate. By the 20th day of the hospitalisation, the spleen began to enlarge with 4-5 cm and the liver – by 3-4 cm under the rib arc. A pancytopenic syndrome appeared. The myelogramme following trepanobiopsy of the iliac bone could not be diagnostic because of a bone marrow hypoplasia. After one-month extensive antibiotic and symptomatic treatment, a *hepatic cytolytic, cholestatic syndrome* developed. The temperature curve acquired the characteristic two-peak diurnal appearance (Rodgers candles pattern): increase up to 39 °C by about 17 PM and 3 AM, persistence for 2-3 hours and a lytic decrease with profuse sweating. The differential diagnosis ruled out the possibility of acute viral hepatitis, collagenosis, myocarditis, specific pneumonia, neoplasia, malignant haematological disease. The history records communicated by the relatives revealed that the man's dog was losing weight from 3-4 months, its hair was thinned and that it died some days ago.

According to the clinical signs and the epidemiological anamnesis, a *working diagnosis of visceral leishmaniasis* was accepted. A serological (seronegative) and parasitological morphodiagnostic investigations were performed ("dry tap" bone marrow, negative). On May 21, 2005, a Glucantime (20 mg/kg, i.m.) therapy was initiated. Three days afterwards the temperature decreased steadily to 36.8⁰ – 37.0⁰ C. The general condition of the patient remained however poor: generalized oedemas, mental changes – bradypsychia, articulation changes – bradylalia, clear asthenoadynamia, micturition troubles – oligo-anuria. The aetiological therapy was continued, but an anuric syndrome appeared and despite the massive dehydrating therapy and haemodialysis, the patient died at 31. 01. 2005 at 21 PM on the background of a developed hepato-renal syndrome. About 12 hours after the exitus, a pathoanatomical investigation was done. The histological preparations from spleen, liver and bone marrow were processed by routine methods after a 24-hour stay in

formalin (leishmaniae could be found out up to 6 hours after the death occurred) and they were negative for leishmaniae [2].

A seroepidemiological screening was performed in the regions of diseased men – Yambol and Kaloyanovets on 10 healthy dogs. An indirect immunofluorescence was used [5, 6, 7]. The analysis gave negative results.

CONCLUSIONS

The visceral leishmaniasis, caused by *Leishmania infantum*, is a sporadically manifested parasitosis in Bulgaria.

The aetiological diagnosis could not be always made by immunological and morphological diagnostic approaches. The ex juvantibus therapy had an aetiological effect on the disease and decreased the risk of lately performed diagnoses and the accompanying complications.

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