

Visceral Leishmaniasis Mimicking Multiple Myeloma

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Background

Western and central parts of the Republic of North Macedonia are considered as endemic regions for leishmaniasis. In between the World Wars, all cases of visceral leishmaniasis (VL) were observed in children. However, in the period between 1996 and 2009, all of the cases of VL occurred in adults, the majority of them in young adults (at the age between 20 and 40 years). In that period, a total of 85 cases of VL were diagnosed. The map bellow on figure 1, prepared by The University Clinic for Infectious Disease and Febrile Conditions – Skopje, shows the prevalence of VL in different regions of our country.

None of the diagnosed cases of VL are associated with HIV coinfection.

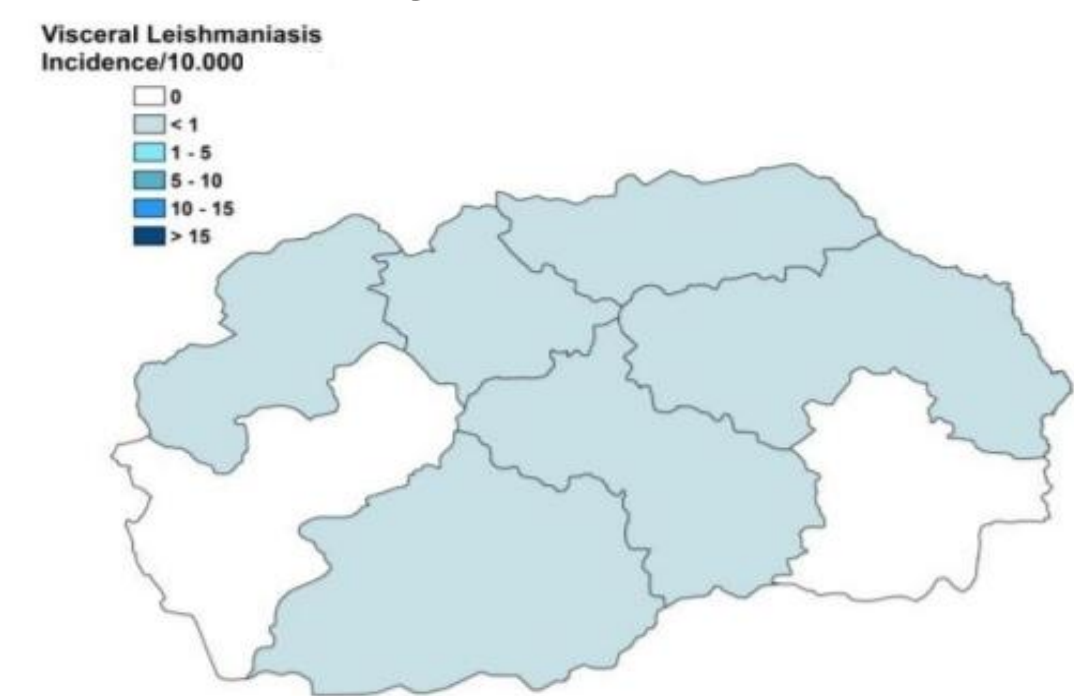


Figure 1 – Prevalence of Visceral Leishmaniasis in different parts of Republic of North Macedonia. Majority of cases come from central and western parts of the country.

Where is the place of hematologist in the setting of Leishmaniasis?

Due to the broad spectrum of hematologic manifestations of VL, patients with VL very often present to a hematologist prior establishing the diagnosis of the anthroponosis. This parasitic infestation is consistently accompanied by one or more hematological abnormalities such as: anemia, thrombocytopenia, pancytopenia, splenomegaly, hepatomegaly and lymphadenopathy, coagulation abnormalities¹. Therefore, VL may be occasionally misdiagnosed as a hematological disease, or at least mislead the diagnostic process. Several case reports published so far have presented misdiagnosed VL as gammopathy, multiple myeloma and Non-Hodgkin Lymphoma^{2,3}.

Objective

Although cytopenia and organomegaly are very common, hypergammaglobulinemia is not that frequent, especially not in early infection. Our goal is to present here a patient with VL whose initial clinical and laboratory findings mimicked multiple myeloma and led us to series of diagnostic procedures for plasma cell dyscrasia.

Case report – Medical history

A 66-year –old woman from the central region of the country presented at our institution with a 2-month history of back pain radiating down the legs, bilateral leg swelling, occasional hematomas. She reported no history of fever. She suffers from hypertension and hypothyroidism. Her family history was unremarkable.

Case Report – Physical examination

Physical examination revealed **massive splenomegaly**, crossing the abdominal midline with no signs of hepatomegaly and lymphadenopathy.

She had **diffuse hematomas** at different stages over the trunk and extremities.

She had **bilateral leg edemas**.

Initial laboratory findings

The patient presented with pancytopenia: Hb 91g/L; WBC 1.8 x 10⁹/L; PLT 26 x 10⁹/L. Peripheral blood smear did not show any specific findings.

What first led us to suspicion of multiple myeloma was the **significant hyperproteinemia (96 g/L) due to hypergammaglobulinemia (83 g/L) of IgG type (IgG 71.5 g/L)**. Electrophoresis confirmed monoclonal origin of Ig components.

Serum urea and creatinin levels were within normal ranges.

Hypocalcaemia of Ca=1,8 mmol/L was noted

β-microglobulin = 12,9 mg/L

She was admitted to hospital for further investigations.

Other Investigations for Multiple Myeloma

• **Serum free light chain measurements** showed elevated levels of both classes: **Kappa = 175 mg/L and Lambda = 119 mg/L, but normal serum free light chain ratio**.

• **Plain radiography of the skull, cervical, thoracic and lumbar spine, pelvis and femora:** *Suspect* small, round, lytic lesions on the skull in the frontoparietal parts bilaterally. Spondyloarthrosis L-S. No other osteolytic lesions were observed.

• In order to confirm the diagnosis of multiple myeloma, bone marrow biopsy with bone marrow aspiration was performed and raised the first suspicion on leishmaniasis.

More precisely, we noted on May-Grünwald-Giemsa-stained bone marrow aspirate smears intra and extracellular inclusions, resembling Leishmani amastigots. An increased number of macrophages with abundant grey cytoplasm containing numerous blue vacuolated bodies (figure 2-3). On the other hand, plasma cells did not exceed 5% of nucleated cells.

In contrast to this, classical histological stating of the bone marrow tissue was not consistent with our findings. The final histological report supported the diagnosis of multiple myeloma, as clusters of atypical plasma cells up to 20% infiltration were noted.

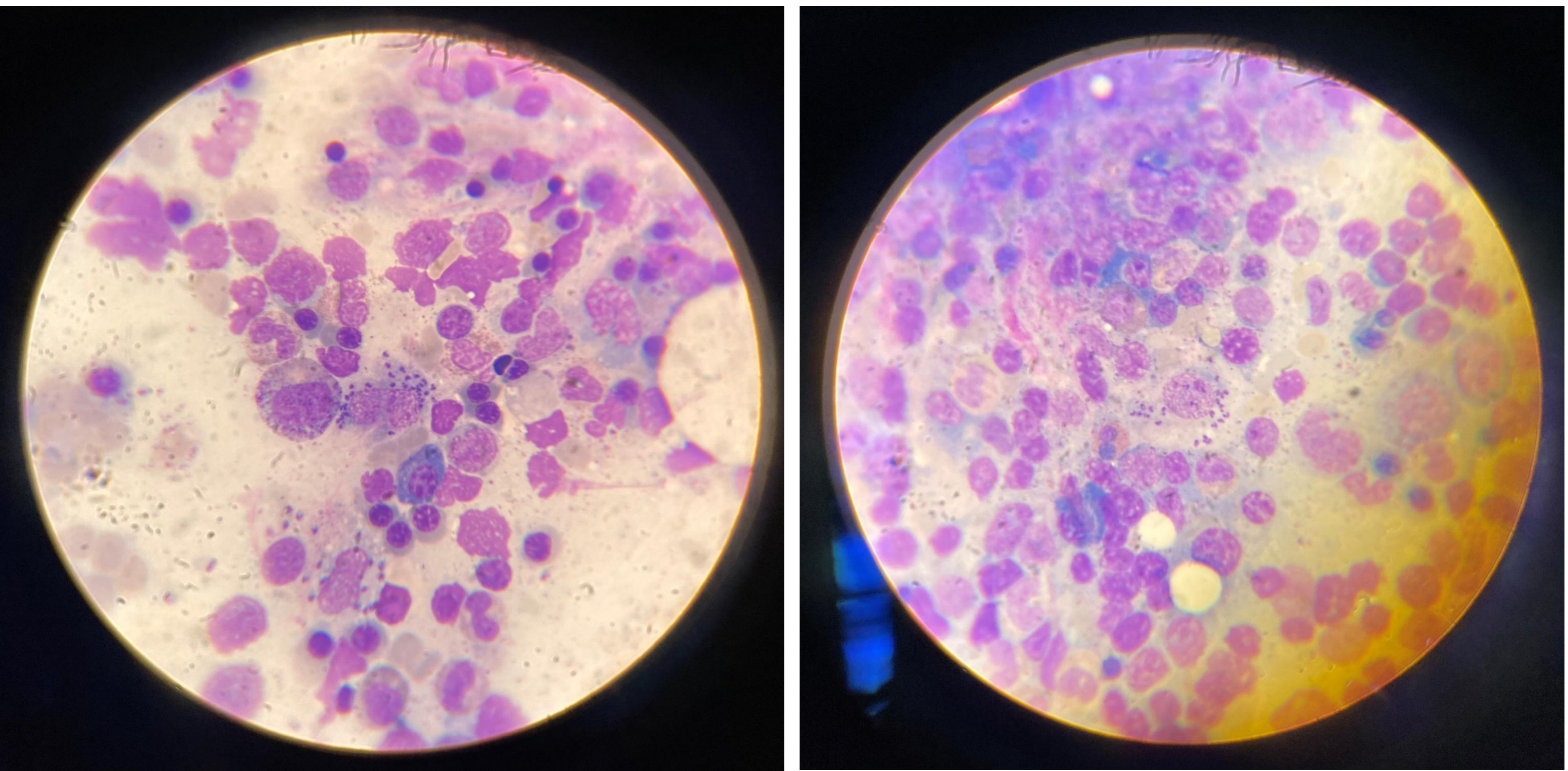


Figure 2 and 3 – May – Grünwald-Giemsa stained bone marrow aspirate smear. Macrophages with abundant basophilic cytoplasm containing intracellular blue vacuolated inclusions, much resembling amastigots.

BM aspirate was analysed with **Multiparameter flow cytometry immunophenotypic study**. For data acquisition, a *FACSCanto II flow cytometer* and *FACSDiva Software* was used. The study showed presence of only 4% CD19-, CD38+, CD138+ cells.

Additionally, we did **PCR for B-cell rearrangement gene** and it was **negative**.

Concluding the Diagnosis of Leishmaniasis

As PCR for Leishmaniasis is not routinely performed in our country, we did serological testing to conclude the diagnosis of VL. The diagnosis of VL was finally reached by a **positive Leishmania indirect fluorescent antibody test**, performed at the laboratory of the Institute for Public Health – Skopje.

Treatment and outcome

In consultation with infectologist, the patient was treated with **Amphotericin B lipid complex (ABELCET)** at a dose of 200mg/ for ten days continuously.

• **Resolution of the symptoms** was protracted and notable at **+2 months** of therapy.

• **The complete recovery of the blood counts** was noted at **+2 months** of therapy, as shown on figures 4-6.

• **What we would like to outline is that the monoclonal IgG although decreased, remained high at the time of last visit (IgG = 27g/L), or at +4 months of therapy.** This kinetics is shown on figure 7.

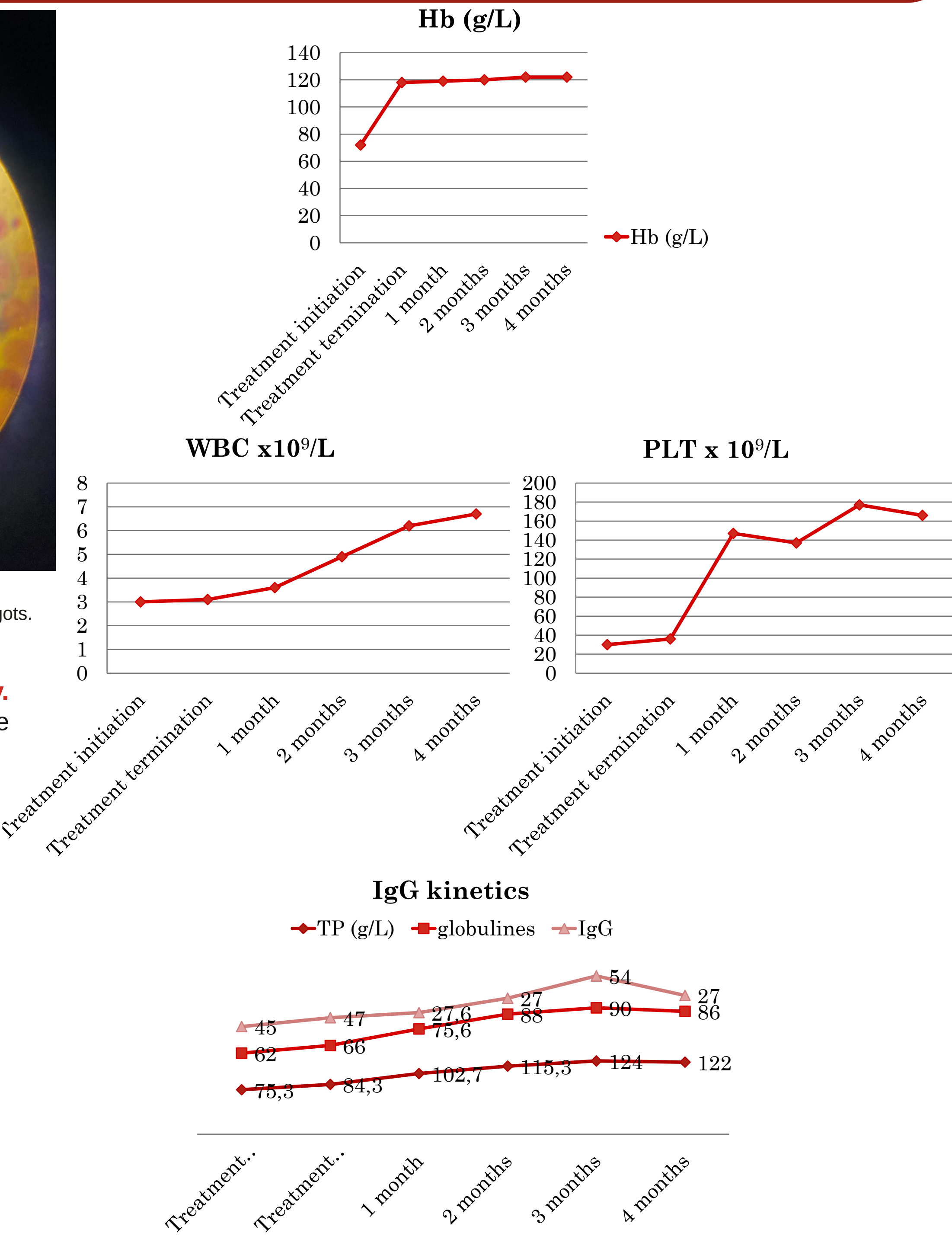


Figure 4,5 and 6 – Blood counts recovery from treatment initiation to +4 months
Figure 7 – Total proteins, globulins and IgG kinetics over time. IgG remained elevated twice the upper limit of normal at +4 months.

References:

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