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O1109 New cellular biomarkers to follow the treatment of patients with visceral leishmaniasis

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Background: Biomarkers able to reveal the outcome of leishmaniasis treatment are urgently needed. Not only would they be useful when making clinical decisions regarding the continuation of treatment, they would allow trials of new drugs or treatment regimens to be shortened, since the expression of this immunity biomarkers could confirm that recovery is completed and no relapsed should be expected. It is also important to establish those tools needed to assess the adaptive immunity elicited by the treatment. The aim of this study was found new biomarkers to assess cellular immune response after treatment in patients with *L. infantum*-induced visceral leishmaniasis.

Materials/methods: From the medical department of Hospital de Fuenlabrada (Madrid, Spain) were collected samples from six patients with active visceral leishmaniasis, all treated with liposomal amphotericin B, underwent medical examination at 0, 3, 6, and 12 month after the start treatment. The samples were tested using whole blood assay. Briefly, 500 µl of blood was placed on its own in a tube (negative control), and another in a tube containing soluble *Leishmania* antigen (SLA), and incubated at 37ºC for 24 h. The levels of IL-2, IFN-γ, CXCL-10 and CXCL9 were determined in SLA-stimulated plasma using the Cytometric Bead Array

Results: The concentrations of these chemokines/cytokines rose after treatment, with values remaining higher at 12 months. The highest CXCL10 and CXCL9 concentrations were detected during the first months of follow-up. Increases in IL-2 and IFN-γ were also seen, but were slower compared to those seen for the chemokines studied. The calculated cut-offs showed SLA-induced IFN-γ and CXCL9 to distinguish between cured status and active disease status at 6 months in 6/6 patients; CXCL10 distinguished in 5/6 patients, and IL-2 did so in 4/6.

Conclusions: In conclusion, the present work shows that IFN-γ, CXCL10 and CXCL9 can be used as markers of cure in immunocompetent patients treated for *L.infantum*-induced VL. The high concentrations of CXCL10 and CXCL9 might be easy to detect with simple-to-use platforms that could be employed in the field.