

O057

Oral Session

News in travel, tropical, and parasitic infections

**LEISHMANIASIS IN TURKEY: ESTABLISHMENT OF CUTANEOUS LEISHMANIASIS MODELS ON HAMSTERS (MESOCRICETUS AURATUS) USING LEISHMANIA TROPICA, L. INFANTUM AND L. MAJOR ISOLATES OBTAINED FROM TURKISH PATIENTS**

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**Objectives:** The World Health Organization reports that more than one and a half million people are diagnosed as cutaneous leishmaniasis (CL) every year in the world. CL figures have also been rising in Turkey, where cases due to *L. tropica*, *L. infantum*, and (in recent years) *L. major* have been recorded. To use in the studies that will unveil the contributing factors of CL and implement effective measures against the infection, a hamster model was established with the isolates of *L. tropica*, *L. infantum* and *L. major*, each obtained from three CL patients from different endemic areas in Turkey. Each species was initially identified by the interpretation of melting curve analyses that followed Real Time PCR targeting the ITS-1 region of *Leishmania sp.*, and confirmed with isoenzyme analyses.

**Methods:** Lesion aspiration samples of the CL patients were initially inoculated into NNN and RPMI medium including 20% of fetal calf serum, respectively, for mass culture. Suspensions including  $1 \times 10^8$  promastigotes/ml were prepared and injected into the left footpads of hamsters subcutaneously at 10 and 15  $\mu$ ls (SC Group; 3 subgroups, 18 hamsters), while no injection was given to Control Group (CG; 6 hamsters). Footpads of the hamsters in SC Group were observed for 3 months and the size and thickness of the lesions were measured twice a month. At the end of the 3<sup>rd</sup> month, lesion aspiration samples from footpads of hamsters were taken and not only stained with Giemsa and examined using microscopes for *Leishmania* amastigotes, but also inoculated in NNN medium and incubated in 25°C for promastigotes.

**Results:** We observed that the lesions accompanied by erythema and swelling on the footpads occurred in all hamsters in SC Group 20 days after inoculation. The parasites were recovered in microscopic and culture samples by the end of the 3<sup>rd</sup> month. The average lesion size of hamsters was 2.20 mm in CG; however, it reached 6.09 mm in *L. infantum* subgroup, 9.13 mm in *L. tropica* subgroup and 11.0 mm in *L. major* subgroup of SC Group. There was an extreme and somewhat total tissue loss in hamsters in *L. major* subgroup, while no tissue impairment was noticed in others.

**Conclusion:** This is the first experimental hamster model, established with the causative agents of CL infection in Turkey, which are *L. tropica*, *L. infantum* and *L. major*. Using this model, it will be possible for researchers to conduct large-scale projects on various research areas, including resistance to chemotherapeutics, new treatment options, tissue tropisms of parasites (dermotrophic/viscerodermotrophic), vaccine development, pathogenesis, molecular biology, biochemistry and other diagnostic options. *This project is financially supported by TUBITAK (Project no: 111S179).*