

International Conference on Parasitology

August 24-26, 2015 Philadelphia, USA

Protective immunity using different adjuvants in combination with Killed *Leishmania donovani* antigen against experimental visceral leishmaniasis

Ankita Thakur, Harpreet Kaur and Sukhbir Kaur
Panjab University, India

Visceral leishmaniasis (VL) is a neglected tropical disease caused by protozoan parasites of the *Leishmania donovani* complex. An estimated 200 000 to 400 000 new cases are reported annually. Control of VL infection till date relies on chemotherapy. The therapeutic armamentarium for VL is currently plagued with several limitations as the available drugs are toxic, expensive and need to be administered for extended periods. So there is an urgent need to find another alternative in the form of a vaccine. Killed vaccines composed of parasite fractions or whole killed parasites reached phase 3 clinical trials, but showed a limited prophylactic efficacy. It seems that major limiting factor for the development of killed vaccines is lack of a suitable adjuvant. Therefore, the aim of the present study was to enhance the protective efficacy of Killed *Leishmania donovani* (KLD) antigen by using different adjuvants. Inbred BALB/c mice were immunized with KLD antigen alone and in combination with four different adjuvants i.e. alum, saponin, MPL-A and cationic liposomes. Three immunizations were carried out at an interval of two weeks. Two weeks after last booster challenge infection was given and mice were sacrificed on different post challenge days. Protective efficacy of vaccines was analyzed by assessment of parasite burden and generation of cellular and humoral immune responses. All the formulations were found to be immunogenic and imparted significant protection. However, level of protection varied with the type of adjuvant used. Our findings suggest promising antileishmanial potential of KLD as an antigen candidate in combination with cationic liposomes and MPL-A as adjuvants against murine visceral leishmaniasis.

Biography

Ankita Thakur is pursuing her Ph.D. degree. She is working as Senior Research Fellow (fellowship granted by DST INSPIRE, India) in Department of Zoology, Panjab University, Chandigarh, India. Presently, she has published four papers in reputed journals. Major part of her research is focussed on designing of anti-leishmanial vaccines. As a part of her research she is testing the immunoprophylactic potential of killed parasite antigens as vaccine candidates against murine visceral leishmaniasis.

atthakur27@gmail.com

Notes: