

FIMSA 2018

Abstract Book

**"Crosstalk between Innate and Adaptive
Immunity in Health and Disease"**

10-13 November 2018, Mandarin Hotel, Bangkok

Hosted by



Supported by





ABS141: CYTOKINE RESPONSE IN LEPTOSPIROSIS SUGGESTS A ROLE FOR TH17 INVOLVEMENT

Kanchana Bandara¹, Chinthika Gunasekara², Manjula Weerasekera³, Chamil Marasinghe⁴, Nilantha Ranasinghe⁵, Neluka Fernando⁶

¹ *Department of Basic Sciences, Faculty of Allied Health Sciences, General Sir John Kotelawala Defence University, Sri Lanka*

^{2,3,6} *Department of Microbiology, Faculty of Medical Sciences, University of Sri Jayewardenepura, Sri Lanka*

⁴ *Department of Medicine, Faculty of Medical Sciences, University of Sri Jayewardenepura, Sri Lanka*

⁵ *Out Patients Department, Base Hospital, Horana, Sri Lanka*

The factors contributing to severe clinical presentation of leptospirosis is still an enigma and maybe multi-factorial. Cytokines released by infected or activated cells are important mediators of host immunity leading to protective immunity or immunopathology. The study aimed to determine the expression of five different pro and anti inflammatory cytokines to study the inflammatory response of leptospirosis.

Serum cytokine concentrations of IL-10, IL-17A, IL-21, IL-23 and TNF- α were investigated in 57 leptospirosis patients and 12 healthy controls using a commercially available ELISA kit (Mabtech, Sweden). Statistical analysis was done using Graphpad Prism.

Severe disease was observed in 36 patients (63%) with one or more following complications; liver insufficiency, acute renal failure, disseminated intravascular coagulation (DIC), myocarditis, pulmonary oedema and hypotension. Serum IL-21 ($p=0.002$), IL-23 ($p=0.002$) and TNF- α ($p=0.003$) were significantly elevated among leptospirosis patients compared to the control group. Although not significant, IL-10 and IL-17A levels were slightly elevated in the leptospirosis group compared to the healthy controls. Interestingly IL-17 and IL-10 cytokine levels were lower in the patients with renal failure and liver failure compared to healthy controls suggesting recovery.

The current study reveals pattern of five cytokine in human leptospirosis. The elevation of IL-17 and significant elevation of IL-21, IL-23 and TNF- α suggests the possible involvement of Th 17 cells in the immune response to Leptospira.