

CYSTATIN C AS A MARKER OF IMMUNE COMPLEX-ASSOCIATED RENAL IMPAIRMENT IN PATIENTS WITH VISCERAL LEISHMANIASIS

Gehad ElGhazali¹, Amir Ibrahim Elshafie², Johan Rönnelid³, Per Venge³

¹Faculty of Medicine, University of Khartoum, Sudan, ²Department of Clinical Pathology and Microbiology, Alribate University Hospital, Khartoum, Sudan, ³Department of Clinical Immunology and Department of Medical Sciences, University of Uppsala, Uppsala, Sweden

INTRODUCTION: Visceral leishmaniasis (VL) is a disease of public health importance in many tropical countries. VL-related nephropathy is known both in humans and animals and is probably one of the major causes of death.

AIM: To investigate the renal function in subjects with VL and PKDL by means of the sensitive and specific marker of glomerular filtration rate, cystatin C, and to relate the findings to circulating immune complexes and cytokine production.

METHODS: Sera were obtained from 40 patients with VL (23 with sub acute disease and 17 with acute disease), 17 patients with PKDL and 22 healthy controls.

RESULTS: Our results showed significantly elevated levels of cystatin C, but not of creatinine in VL ($p=0.004$). The increased levels of cystatin C were mostly among patients with acute disease ($p<0.0001$). Liver function test such as ALT, AST, γ GT and LD were all raised in VL, but only γ GT and bilirubin were higher in the acute disease as compared to the sub acute. In patients with VL, cystatin C levels were positively correlated to circulating immune complexes and mononuclear cell production of GM-CSF, but negatively correlated to AST and LD.

CONCLUSION: Cystatin C is a superior marker of glomerular function in Leishmaniasis and immune complex deposition and GM-CSF are the two principles, which most likely are causally involved in the mechanisms leading to glomerular dysfunction in this disease.

Keyword: cystatin c, leishmaniasis, immune complexes