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## The correlations of activins and follistatin with viral load, liver damage, interleukin-6 and tumour necrosis factor- $\alpha$ in treatment naive patients with chronic hepatitis C genotype 1 and 4: A case-control study

Ahmed Mohammed Ashshi<sup>1</sup>, Bassem Refaat<sup>1</sup>, Adel Galal El-Shemi<sup>1,3</sup> and Adnan AlZanbagi<sup>2</sup>

<sup>1</sup>Umm Al-Qura University, Kingdom of Saudi Arabia

<sup>2</sup>King Abdullah Medical City, Kingdom of Saudi Arabia

<sup>3</sup>Assiut University, Egypt

**Background:** Activins and follistatin are involved in the regulation of immune system and their importance in liver diseases has recently emerged

**Objectives:** To measure the effect(s) of chronic hepatitis C (CHC) genotype 1 and 4 on the serum concentrations of activin-A, activin-B and follistatin, and to determine their correlations with viral load, liver damage, interleukin-6 (IL-6) and tumour necrosis factor (TNF)- $\alpha$ .

**Methods:** Serum samples were collected from 20 male and 20 female treatment naive CHC genotype 1 and 4 Saudi patients (10 males and 10 females for each genotype), to measure activin-A, activin-B and follistatin by ELISA and the results were compared with 40 gender and age matched healthy participants. Additionally, the serum levels of the candidate proteins were correlated with IL-6, TNF- $\alpha$ , viral load and AST platelet ratio index (APRI).

**Results:** Serum IL-6, TNF- $\alpha$ , activin-A and activin-B were significantly increased, whereas serum follistatin was significantly decreased, in both genders of CHC patients compared to control subjects. In both viral genotypes, activin-A was strongly and positively correlated with the viral load, APRI, IL-6 and TNF- $\alpha$ , and negatively with albumin ( $P < 0.01$ ). Activin-B showed similar correlations to activin-A but only in CHC genotype 1 patients and it was weaker than activin-A. No correlation was detected for follistatin.

**Conclusion:** CHC genotype 1 and 4 significantly altered serum activins and follistatin, and the dysregulation of activins/follistatin axis could be associated with host immune response, viral replication and liver injury. More studies are required to elucidate the role(s) and clinical value of activins and follistatin in CHC.

### Biography

Ahmed Mohammed Ashshi has completed his PhD (1999) Doctor of Philosophy in Medical and Molecular Virology, Faculty of Medicine, University of Manchester, United Kingdom (UK). AIBMS: (2001) Professional qualification in Medical Laboratory Sciences, Associate, Institute of Biomedical Sciences, United Kingdom (UK). Dean, Faculty of Applied Medical Sciences, Umm Al Qura University, Makkah Associate Professor of Medical and Molecular Virology, Faculty of Applied Medical Sciences, Umm Al Qura University, Makkah, Kingdom of Saudi Arabia Chairman, Department of Laboratory Medicine, Faculty of Applied Medical Sciences, Umm Al Qura University, Makkah, Kingdom of Saudi Arabia.

[aashshi@yahoo.com](mailto:aashshi@yahoo.com)