IJAE
Vol. 119, n. 1 (Supplement): 36, 2014
ITALIAN JOURNAL OF ANATOMY AND EMBRYOLOGY

The hepatic expression of GH/IGF1 axis components is impaired with fibrosis progression in patients with HCV-related chronic hepatitis

Simone Carotti[1], Silvio Porzio[1], Umberto Vespasiani-Gentilucci[2], Giuseppe Perrone[3], Andrea Onetti-Muda[3], Antonio Picardi[2], Sergio Morini[1]

[1] Laboratory of Microscopic and Ultrastructural Anatomy, University Campus Bio-Medico, Rome, Italy
[2] Clinical Medicine and Hepatology Unit, University Campus Bio-Medico, Rome, Italy
[3] Department of Anatomical Pathology, University Campus Bio-Medico, Rome, Italy

Background and aim: Resistance to the action of growth hormone (GH), characterized by low serum levels of insulin-like growth factor-1 (IGF1) in the face of high concentrations of GH, frequently complicates cirrhosis (Assy et al., 2008). Physiologically, the activation of GH receptor (GHR) determines phosphorylation of signal transducer and activator of transcription (STAT)-5 and the consequent induction of IGF-1 expression. The suppressor of cytokine signalling (SOCS)-3 negatively regulates this intracellular cascade. Since, to date, the hepatic expression of the GH/IGF1 axis components has been studied mainly in animal models (Blaas L et al., 2010), we aimed to evaluate their expression in the liver of patients with HCV-related chronic hepatitis. **Methods:** Fifty HCV patients were studied and liver samples were histologically re-evaluated for grading and staging. The expression of GH/IGF1 axis components was assessed by immunohistochemistry. **Results:** At the hepatocyte level, IGF-1 and phospho-STAT5 showed a negative correlation with fibrosis stage, while SOCS3 a positive one ($p<0,05$ for all). Furthermore, the hepatocyte expression of IGF1 was negatively correlated with its expression by hepatic stellate cells ($p<0,05$). **Conclusions:** IGF1 expression by hepatocytes was reduced with fibrosis progression, probably due to the impairment of GHR intracellular cascade. The inverse correlation between IGF1 expressed by hepatocytes and hepatic stellate cells suggests specific roles for IGF-I produced by different hepatic cells.

References

[1] Assy N et al. (2008) Growth hormone stimulated IGF-1 generation in cirrhosis reflects hepatocellular dysfunction. J Hepatol 49: 34–42.
[2] Blaas L et al. (2010) Disruption of the growth hormone–signal transducer and activator of transcription 5–insulinlike growth factor 1 axis severely aggravates liver fibrosis in a mouse model of cholestasis. Hepatology 51: 1319–26.

Keywords
Insulin-like growth factor-1, fibrosis, HCV related chronic hepatitis.