Hepatocyte Growth Factor and E-Cadherin in Acute Pancreatitis. Time Course and Early Assessment of Disease Severity

Alessandra Barassi¹, Massimiliano M Corsi², Maria Teresa Iammarino³, Giada Dogliotti², Riccardo Casadei⁴, Gian Vico Melzi d’Eril¹, Raffaele Pezzilli³

¹Clinical Biochemistry Laboratory, Department of Medicine, Surgery and Dentistry, San Paolo Hospital and ²Department of Human Morphology and Biomedical Sciences “Città Studi”; University of Milan. Milan, Italy. ³Pancreas Unit, Department of Digestive Diseases and Internal Medicine and ⁴Department of Surgery, “Sant’Orsola-Malpighi Hospital”, University of Bologna. Bologna, Italy

Objectives To evaluate the hepatocyte growth factor (HGF) and E-cadherin (EC) time course in the early phases of acute pancreatitis and to explore the usefulness of these molecules in assessing the severity of the disease. Patients Sixteen consecutive acute pancreatitis patients (7 males, 9 females; mean age 62.8 years, range 30-79 years) admitted to the hospital within 6 hours after the onset of pain; 16 age- and sex-matched healthy subjects were also studied. Eleven patients had mild pancreatitis and 5 had a severe disease. The acute pancreatitis was of biliary origin in 7 patients (43.8%), due to ERCP in 4 (25.0%), due to alcohol abuse in 2 (12.5%) and idiopathic in the remaining 3 (18.8%). Methods HGF and EC were quantified on hospital admission and for the following 2 days by using commercially available kits (Human HGF Immunoassay and Human sE-Cadherin Immunoassay; R&D Systems Inc., Minneapolis, MN, USA). Data were analyzed by means of the Kruskal-Wallis and Wilcoxon tests. Results Serum HGF concentrations were significantly higher (P=0.044) in acute pancreatitis patients (mean±SD: 1,895±980 pg/mL) than healthy subjects (mean±SD: 1,246±380 pg/mL) on the second day of the disease, while EC serum levels were significantly higher in acute pancreatitis patients on the first (mean±SD: 57.5±20.4 ng/mL; P=0.015) and the second day (57.7±25.2 ng/mL; P=0.015) of the disease than in healthy subjects (mean±SD: 40.5±11.6 ng/mL). HGF and EC serum concentrations were not significantly different between patients with severe disease and those with mild disease (P>0.089). Conclusions HGF and EC reflect an inflammatory response in acute pancreatitis patients; however, serum levels of these two molecules are not related to the severity of acute pancreatitis.