

3rd International Conference on Gastroenterology & Urology

July 28-30, 2014 DoubleTree by Hilton Hotel San Francisco Airport, USA

Protective mechanisms in acute pancreatitis: Role of hormones in the activation of the innate defense system

Jolanta Jaworek

Jagiellonian University Medical College, Poland

The nonbacterial disease of pancreas, acute pancreatitis is classified as mild and severe form. Whether acute pancreatitis develops in severe form, characterized by high mortality, or resolves depends on the intensity of inflammatory process which is counteracted by recruitment of innate defense mechanisms. The hormones ghrelin, leptin and melatonin have been reported to modulate the immune function of the organism and to protect the pancreas against acute pancreatitis. Previous studies have shown that the pretreatment of the rats with above hormones prior to the induction of acute pancreatitis significantly attenuated intensity of inflammation and reduced pancreatic tissue damage. The beneficial effects of ghrelin, leptin and melatonin have been related to the activation of antioxidant system of the pancreatic tissue, to the mobilization of non-specific immune defense, to the inhibition of nuclear NF- κ B and modulation of cytokine production, to the stimulation of heat shock proteins and to the changes of apoptotic processes in the acinar cells. The protective effect of ghrelin on the pancreas is perhaps indirect and dependent on the release of growth hormone and insulin-like growth factor-1. Leptin and ghrelin, but not melatonin employed sensory nerves in their beneficial action on acute pancreatitis. It is very likely that ghrelin, leptin and melatonin could be implicated in the natural protection of pancreatic gland against inflammatory damage, because the blood levels of these substances increase in the initial phase of pancreatic inflammation. Above hormones could be the part of innate defense system which might suppress or attenuate the inflammatory process in the pancreas.

mpjawore@cyf-kr.edu.pl