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Novel gut barrier modulatory effect of Vildagliptin in amelioration of bacterial translocation in cholestatic rats

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Intestinal barrier dysfunction is frequently implicated in the etiology of septic complications following obstructive jaundice. The present study was conducted to investigate the potential gut barrier modulating effect of Vildagliptin (VLD), a dipeptidyl peptidase-IV (DPP-IV) inhibitor, on common bile duct ligation (CBDL) in rats. VLD (10 mg/kg/d; p.o) was administered for 10 successive days after CBDL in male Sprague-Dawley rats. VLD reduced portal endotoxemia induced by CBDL and suppressed rectal temperature elevation, body weight loss and colon and spleen indices to different extents. Moreover, it reversed villous blunting, low villous density, mucosal thinning and inflammatory cell infiltration noticed microscopically in the ileal segments of the CBDL rats. These events were accompanied by the reduction of intestinal myeloperoxidase activity and lipid peroxidation, the elevation of the major anti-oxidant molecule, glutathione, as well as the normalization of ileal nitric oxide level. Furthermore, ileal DPP-IV was inhibited in association with the rise in ileal glucagon-like peptide-1 (GLP-1) and insulin-like growth factor-1 (IGF-1) levels in VLD treated animals. The current findings suggest that VLD anti-oxidant, anti-inflammatory, as well as enhancements of incretin and IGF-1 account for the hardwearing of the intestinal barrier that functions competently in the absence of the supporting bile elements.

Biography

Doaa A. Zaky has completed her MBB CH of Medicine and Surgery from Ain Shams University in 2002 and also completed her MD in Tropical Medicine from the same university in 2010. She has a Professional Diploma of Clinical Nutrition from National Nutrition Institute. Her field of interest includes, Infectious Diseases and Tropical Medicine, Gastroenterology and Hepatology and Clinical Nutrition. She is also working as a researcher in the team of stem cell research in Ain Shams University, Egypt.

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