

11th Asia Pacific Diabetes Conference and Expo

July 11-12, 2016 Brisbane, Australia

Effects of growth hormone secretagogue receptor agonist and antagonist in non-obese type 2 diabetes MKR mice

Rasha Mosa, Huang L and Chen C
University of Queensland, Australia

Ectopic lipid deposition is a high risk factor for insulin resistance and its associated diseases such as type 2 diabetes (T2D). Peroxisome proliferator-activated receptor gamma (PPAR γ) plays a key role in adipocyte differentiation, lipid metabolism and is a therapeutic target for the treatment of insulin resistance. Recent evidence suggests that Hexarelin, a ghrelin synthetic analogue that acts through GH secretagogue receptor (GHS-R), promotes PPAR γ activation in macrophages and adipocytes. However, whether Hexarelin impacts the fat and glucose metabolism in diabetes remains unclear. By using the MKR diabetic mouse model, which is characterized by hyperinsulinaemia, hypertriglyceridaemia and ectopic fat deposition, we assessed the effects of Hexarelin and the GHS-R antagonist, D-Lys GHRP-6, on glucose homeostasis, energy balance, hormonal and metabolic profiles in MKR diabetic mice. Our data demonstrated that chronic treatment with Hexarelin for 2 weeks improved glucose and insulin tolerance in diabetic mice. This effect is likely through activation of fatty acid metabolism and adipocyte proliferation, as well as increased insulin sensitivity. In conclusion, our results suggest that long-term treatment of Hexarelin benefits glucose and fat metabolism via reducing ectopic lipid deposition.

Biography

Rasha Mosa, a third year PhD student at University of Queensland, School of Biomedical Sciences, Australia is supported by competitive Egypt Government International Scholarship and UQ International Scholarship. She was an Assistant Lecturer of Medical Physiology at Sohag University, Faculty of Medicine, Egypt since 2009. She was awarded Master's degree in Physiology from Sohag Faculty of Medicine in 2009 and a Bachelor of Medicine and Surgery from Sohag Faculty of Medicine in 2004. She is interested in studying the pathophysiology of type 2 diabetes and its potential therapy. Recently, she published a review in the field of endocrine on, "Implications of ghrelin and hexarelin in diabetes and diabetes-associated heart diseases".

rasha.habeebmosa@uq.net.au

Notes: