Session GPS03 - Monday General Poster Session

1783-P / 1783 - Activation of Angiotensin Type 2 Receptors Protects Pancreatic Islet Function in Obese Rats Induced by High-Fat Diet

June 13, 2016, 12:00 - 2:00 PM | Poster Hall (Halls D-E)

Authors

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Disclosures

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Activation of Ang II type 2 receptor (AT2R) has been examined as a potential therapeutic strategy in cardiovascular and central nervous systems. However, there is few findings in insulin resistance and diabetes mellitus type 2 pathogenesis. In the current study, we evaluated the effects of Compound 21 (C21), a nonpeptide AT2R agonist, on islets in obese rats induced by high-fat diet (HFD). Adult male Sprague-Dawley (SD) rats were randomly assigned into five groups: normal (fed with normal diet), HFD and HFD respectively plus telmisartan (Tel, 1 mg/kg/d), C21 (1 mg/kg/d), Tel+C21. Tel and C21 were continually given by oral administration for four weeks. After treatment, the rats received an intraperitoneal glucose tolerance test, and the pancreas were saved to examine islet morphology and biochemical parameters of insulin secretion. We found that, compared with control HFD rats, those HFD rats treated with C21 alone and combined with Tel displayed lower blood glucose lever, higher serum insulin concentration and improved glucose tolerance. These rats had more integrated islets, larger positive insulin-staining islet mass and up-regulated insulin and GLUT2 protein expressions accompanied with slightly higher AT2R expression in the pancreas. These data suggest that C21 protects pancreatic islets function against lipotoxicity via activatin of AT2R.