

论文

吡格列酮对自发性IGT-OLETF大鼠胰岛素抵抗的改善作用

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摘要:

目的研究胰岛素增敏剂吡格列酮(pioglitazone)对自发性IGT-OLETF大鼠胰岛素抵抗的改善作用。方法血糖测定采用葡萄糖氧化酶法,血胰岛素测定采用放射免疫法,游离脂肪酸(FFA)采用铜试剂显色法。结果 IGT-OLETF大鼠具有明显糖耐量、胰岛素耐量异常,脂代谢紊乱,胰岛素敏感指数显著降低等特征。吡格列酮可明显提高IGT-OLETF大鼠对外源性胰岛素的反应性,改善其高胰岛素血症,降低血甘油三酯(TG)、FFA水平,降低肝脂含量及骨骼肌TG含量,使胰岛素敏感指数基本恢复正常。结论吡格列酮可明显改善IGT-OLETF大鼠的胰岛素抵抗。

关键词: 胰岛素抵抗 胰岛素增敏剂 吡格列酮

Ameliorations of pioglitazone on insulin resistance in spontaneous IGT-OLETF rats

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Abstract:

AimTo investigate the ameliorations of pioglitazone, a member of the thiazolidinedione group of antidiabetic agents, on insulin resistance in spontaneous OLETF rats with impaired glucose tolerance (IGT-OLETF). MethodsOne group of IGT-OLETF rats was orally administered pioglitazone at the dose of 20 mg·kg⁻¹ (qd) for 2 weeks. Another group was given the same volume of solvent as control. Glucose tolerance and insulin tolerance were tested, and blood glucose concentrations, insulin levels and lipids in serum, liver and muscle were determined. Insulin sensitive index (ISI) was calculated by the reciprocal of fasting blood glucose times fasting insulin. ResultsPioglitazone was shown to markedly enhance the glycemic response to exogenous insulin (0.4 u·kg⁻¹, sc) in the model. The falls of blood glucose at 40 and 90 min in the insulin tolerance test were augmented by 70% and 158% in the treated group than the control. The serum insulin levels were significantly decreased and the ISI nearly normalized after treatment. Pioglitazone also lowered the serum TG and FFA levels and the lipids in liver and muscle. No effect was found on the expression of leptin in epididymal adipose tissues and on the activity of GFAT, a key enzyme in hexosamine biosynthesis pathway (data were not shown).Conclusion Pioglitazone can improve the insulin resistance state in IGT-OLETF rats. Correction of lipid disorder may be associated with it.

Keywords: insulin sensitizer pioglitazone insulin resistance

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