

[1]李聃丹,侯君,应懿,等.侧脑室注射CART促进2型糖尿病大鼠胰岛素分泌[J].第三军医大学学报,2014,36(08):793-796.

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侧脑室注射CART促进2型糖尿病大鼠胰岛素分泌(PDF)

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Title: Injection of CART *via* lateral ventricle enhances insulin secretion in rats with type 2 diabetes

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关键词: [2型糖尿病](#); [侧脑室](#); [CART](#); [胰腺](#)

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摘要: 目的 测定并比较侧脑室注射可卡因-苯丙胺转录调节肽(cocaine and amphetamine regulated transcript, CART) 24 h后2型糖尿病大鼠与正常组大鼠空腹血糖(FBG)、血清总胆固醇(TC)、甘油三酯(TG)、高密度脂蛋白(HDLC)、低密度脂蛋白(LDLC)、糖化血红蛋白(HbA_{1c})、血清和组织胰岛素含量以及胰腺组织胰岛素(insulin, INS) mRNA相对表达量,明确在2型糖尿病大鼠侧脑室注射CART后胰腺中胰岛素含量变化。 方法 采用高糖高脂饮食/大剂量链脲佐菌素(STZ)制备2型糖尿病大鼠模型,侧脑室注射人工脑脊液(artificial cerebrospinal fluid, ACSF)/CART 24 h后,测定血液中FBG、TC、TG、HDLC、LDLC、HbA_{1c},血清和胰腺组织中胰岛素含量;采用免疫荧光法对大鼠胰腺CART、INS进行定位分析;采用荧光定量PCR测定胰腺组织中INS mRNA相对表达量。 结果 对2型糖尿病大鼠模型进行侧脑室注射CART后,FBG明显下降($P<0.05$),但未达到正常水平,胰腺中INS mRNA相对表达量上调,与糖尿病大鼠侧脑室注射ACSF相比较具有统计学差异($P<0.05$)。 结论 糖尿病大鼠侧脑室注射CART后能增加胰腺中CART的表达量及胰岛素含量,表明CART有促进胰岛B细胞分泌胰岛素的作用。

Abstract: Objective To detect the biochemical parameters, insulin content in serum and tissue and mRNA level of insulin upon injection of cocaine and amphetamine regulated transcript (CART) *via* lateral ventricle for 24 h in normal rats and type 2 diabetes rats, and to explicit the role of CART on insulin secretion in

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pancreas. Type 2 diabetes model was established by food with high fat and sugar/STZ. After injection of artificial cerebrospinal fluid (ACSF) or CART via lateral ventricle for 24 h, biochemical parameters and insulin content of both tissue and serum were detected. CART and insulin positioning analysis was accomplished by double immunofluorescent labeling. Insulin mRNA level in pancreas was measured by quantitative RT-PCR. Results Compared with ACSF injection, fasting blood glucose (FBG) decreased in type 2 diabetes rats after CART injection ($P<0.05$), although it did not return to the normal level. Furthermore, the mRNA level of insulin in pancreas increased significantly after injection of CART in type 2 diabetes rats ($P<0.05$). Conclusion Both CART and insulin contents increase obviously in pancreas after CART injection in lateral ventricle of type 2 diabetes rats. CART may play important roles in enhancing insulin secretion in pancreas.

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