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论文

早期胰岛素强化治疗对NOD小鼠动态血糖和免疫调节的作用

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摘要：

目的 探讨早期胰岛素强化治疗对非肥胖糖尿病（NOD）小鼠T细胞亚群的免疫调节机制。方法 12～14周龄NOD小鼠30只随机分为早期强化治疗组(EIT组）、早期常规治疗组(ECT组）、晚期强化治疗组(LIT组）、晚期常规治疗组(LCT组）、糖尿病对照组(DM组），另选取同周龄未发病雌性NOD小鼠6只为正常对照组（NC组）。比较EIT组与其他各组体质量、24h动态血糖及干预治疗后脾脏和胸腺T细胞亚群的变化情况。结果 EIT组治疗后体质量高于LIT组、LCT组和DM组（P<0.001），接近NC组（P>0.05），24h动态血糖平均值基本维持在(5.758±1.515)mmol/L，低于LIT组、LCT组和DM组（P<0.001）,高于NC组（P<0.05），诱导脾脏中CD4+、CD3+T细胞百分比低于LCT组和DM组（P<0.001），并使CD4+/CD8+亚群比值低于LCT组和DM组（P<0.001），同时诱导胸腺CD4+CD8-单阳性细胞百分比低于LIT组、LCT组和DM组（P<0.001），CD4+CD8+双阳性细胞百分比与LIT组、LCT组和DM组比较差异均有统计学意义（P<0.001）。结论 早期胰岛素强化治疗有效控制NOD小鼠血糖和体质量在正常水平;早期强化治疗可以通过调节宿主脾脏和胸腺淋巴细胞亚群的变化调节自身免疫反应。

关键词： 早期强化治疗；胰岛素；免疫调节；脾脏；胸腺；NOD小鼠

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Effects of early intensive insulin therapy on the dynamics of blood glucose and immunoloregulation on T lymphocyte subgroups in non-obese diabetic mice

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Abstract:

Objective To investigate the immunoloregulation effects of early intensive insulin therapy on T lymphocyte subgroups in non-obese diabetic (NOD) mice. Methods Thirty (12-14 weeks old)female NOD mice were randomly divided into the early intensive therapy(EIT) group, the early conventional therapy(ECT) group, the late intensive therapy(LIT) group, the late conventional therapy(LCT) group, and the no-therapy (DM)group. Also, age-matched female NOD mice, without the advent of diabetes, were included in the study as the normal control (NC) group. The changes of weight and blood glucose in the EIT group and other groups were observed and the ratio of T lymphocytes of spleen and thymus was analyzed by flow cytometer. Results The weight of the EIT group increased with age compared with that in the LIT, LCT and DM groups (P<0.001) and the average 24-hour blood glucose was sustained at (5.758±1.515) mmol/L, which was significantly lower than that in the LIT, LCT and DM groups(P<0.001) but was higher than that in the NC group. As for the T cells from the spleen, the percentage in the EIT group of CD4+ and CD3+ was low, and CD4+/CD8+ ratio significantly decreased compared with those of LCT and DM groups(all P<0.001). Compared with LIT, LCT and DM groups, the percentage of CD4+CD8- T cells from thymus in the EIT group was significantly lower(all P<0.001), while CD4+CD8+ was markedly higher(all P<0.001). Conclusions Early intensive insulin therapy can effectively control blood glucose, keep normal weight gain, and decrease the host autoimmunity, which relate to the changes of T lymphocytes subsets.

Keywords: Early intensive therapy; Insulin; Immunoloregulation; Spleen; thymus; NOD mice

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