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POSTER

Improved glucose homeostasis effect of conditioned media from adipose-derived stem cells in type 1 diabetic mice

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Abstract

Background: Many studies suggested adipose derived stem cell (ASC) transplantation as a new approach to control hyperglycemia in type 1 diabetes mellitus. It is proposed that the effects of these cells could be not only based on the direct cell-cell interaction but also the secretion of cytokines. This study aimed to demonstrate the effect of adipose stem cell-derived conditioned medium (CM) on the treatment of STZ-induced diabetic mice.

Methods: CM was obtained from 24-hours-cultured medium of ASCs and centrifuged to remove the debris. Type 1 diabetic mice were intraperitoneally injected CM for 30 consecutive days. Therapeutic efficacy of CM was assessed by survival rate, blood glucose level, serum insulin level, histological structure of pancreatic islets.

Results: The results showed that CM treatment could decrease mortality rate (from 33,33% to 0%) as well as blood glucose level (from 425,667±65,753 mg/dl to 203,500 mg ±20,350 mg/dl) and enhance insulin secretion, improve size and function of pancreatic islets of diabetic mice.

Conclusion: Conditioned medium maybe a promising therapy for type 1 diabetes mellitus.

Keywords

Adipose derived stem cell, conditioned medium, mice, type 1 diabetes mellitus

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References