

LOSS OF INTERSTITIAL CELLS OF CAJAL IN THE SMALL INTESTINE OF RATS WITH DIABETES MELLITUS

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Diabetic gastroenteropathy is a common complication in diabetes mellitus. Disturbance of interstitial cells of Cajal (ICC) distribution plays a significant role in the development of intestinal motility dysfunction.

The aim of this study was to investigate the alterations of the intramuscular and myenteric ICC in the small intestine of rats with diabetes mellitus.

Male Wistar rats were used and diabetes was induced by streptozotocin-nicotinamide (STZ-NA) application. The small intestine specimens were exposed to c-Kit antibody to investigate the ICC. Morphological changes of the cells were quantified by the numerical areal density of intramuscular ICC, and the ICC score of myenteric ICC. Results showed loss of ICC and their network in the small intestine in the diabetic group.

In conclusion, a statistically significant decrease in the number of intramuscular ICC and myenteric ICC was observed in all examined parts of the small intestine in rats with diabetes mellitus. Diabetes mellitus significantly changes the microenvironment of ICC and most likely the reduced signaling by insulin affects ICC and causes their loss.

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