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## EFFECT OF NICOTINE INTOXICATION ON PANCREATIC MORPHOLOGY

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**Aim of the study.** To identify morphological and morphometric alterations in the exocrine and endocrine components of the pancreas in 9-month-old white mongrel rats subjected to nicotine intoxication and to assess their pathogenetic significance.

**Materials and methods.** The study was conducted on 60 rats divided into control (n=30) and experimental (n=30) groups. Nicotine intoxication was induced by passive inhalation of tobacco smoke twice daily for 30 days. Pancreatic tissue samples were processed using standard histological staining techniques, and morphometric parameters were evaluated by light microscopy.

**Results.** Nicotine exposure resulted in a statistically significant reduction in pancreatic weight from  $0.91 \pm 0.04$  g to  $0.78 \pm 0.05$  g. The exocrine pancreas exhibited a decrease in acinar area from  $9820 \pm 310 \mu\text{m}^2$  to  $7140 \pm 280 \mu\text{m}^2$ , a reduction in acinar diameter from  $41.3 \pm 1.8 \mu\text{m}$  to  $33.8 \pm 2.2 \mu\text{m}$ , and thinning of the apical zone from  $3.4 \pm 0.2 \mu\text{m}$  to  $2.1 \pm 0.3 \mu\text{m}$ . The ductal system demonstrated interlobular duct dilation ( $19.4 \pm 1.2 \mu\text{m}$  to  $27.5 \pm 1.4 \mu\text{m}$ ) and epithelial desquamation reaching 52%. The endocrine component was characterized by a reduction in islet diameter from  $132.0 \pm 6.0 \mu\text{m}$  to  $108 \pm 5 \mu\text{m}$  and a decrease in the proportion of  $\beta$ -cells from 62% to 49%.

**Conclusions.** Nicotine intoxication induces pronounced dystrophic and atrophic alterations in both exocrine and endocrine pancreatic structures, confirming its significant pathogenetic role in the development of toxic pancreatic injury.

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