

The morphological changes of cardiomyocytes and mitochondrial dysfunction in spontaneous hypertensive rats with experimental diabetes mellitus

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Summary. The conception of energetic deficiency in the pathogenesis of arterial hypertension and diabetes mellitus presents new perspectives in the understanding of molecular and biochemical mechanisms of these diseases. It was performed the comparison between morphological changes and mitochondrial dysfunction in spontaneous hypertensive rats with experimental diabetes mellitus. The mitochondrial state was assessed by investigation of the permeability of the giant mitochondrial pore. It was found that the permeability of mitochondrial pore is increased in spontaneous hypertensive rats. It was registered the significant increasing of mitochondrial membrane permeability in case of diabetes. It was observed the increased area of cardiomyocytes' nuclei and decreased nuclear cytoplasmic ratio in diabetic animals. It was demonstrated that nucleic and cytoplasmic RNA concentration is decreased in comparison with the intact spontaneous hypertensive rats. The RNA biosynthesis abnormalities are associated with the degree of mitochondrial dysfunction in the myocardium of spontaneous hypertensive rats with experimental diabetes mellitus.

Key words: forensic medical examination, intravital and posthumous damages, skin, muscle, cells-producers of IL-1 β .

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