

# Abstract

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*Title of thesis: Patophysiological values of rat myocardium after acute exposition of isoprenaline*

Cardiovascular diseases remain one of the main causes of mortality despite advances in medicine. Isoprenaline (ISO) model of myocardial injury in laboratory animals is used to clarify the pathogenesis of acute myocardial infarction (AIM) and to research cardioprotective substances.

The monitoring of early histopathological changes that occur in the rat myocardium at 2 hours after application of 100 mg.kg<sup>-1</sup> s.c. ISO, was the main aim of this experiment. Histological results were completed in collaboration with the Department of Pharmacology and Toxicology which provided the data about functional parameters and biochemical markers also after 2 hours from application. Detected changes were compared against the control group to which the solvent was administered.

Histopathological analysis revealed more frequent and intense changes in the subendocardial area. Some interstitial dilatation with oedema, cardiomyocytes fragmentation and presence of inflammatory infiltration were observed in the myocardium, especially in the area of the apex. Functional parameters as heart rate and blood pressure showed after 2 hours from application of ISO the supposed development coincident to the one observed in previously made studies. Biochemical analysis confirmed the histological results by elevated levels of cardiac troponin T, but markers of oxidative stress (malondialdehyde, total glutathione, vitamin C and vitamin E) haven't shown significant changes after administration of ISO.