

## **ABSTRACT**

His bundle is a part of the cardiac conduction system of mammals, birds and crocodilians. His bundle is important for high cardiac output in endothermic vertebrates. His bundle is a connection between atria and ventricles in fibrous atrioventricular isolation and it serves as an electrical conduction pathway via bundle branches to ventricular apex, where ventricular contraction begins. Defect in cardiac conduction system leads to cardiac arrhythmia and can cause sudden cardiac death.

Thesis describes development of His bundle in mammals and birds, its phylogenesis and atrioventricular conduction in other vertebrates. Thesis also describes disorders of atrioventricular canal development, fibrous anulus and His bundle such a preexcitation syndromes and congenital heart block. Thesis also depicts history of a discovery of the atrioventricular conduction tissue.

Key words: cardiac conduction system, His bundle, atrioventricular canal, anulus fibrosus, ventricular preexcitation, perinatal AVRT, WPW syndrome, congenital heart block