This thesis is focused mainly on the role of radiology assistant in myocardial SPECT examinations, which are here applied in its entirety, from preparing the patient, recording of data, quality control and processing studies.
The aim of this study was to analyse cardiac gated SPECT imaging at children examinated in the Clinic of Nuclear Medicine and Endocrinology in the University Hospital Motol in years 2002-2008 – their numbers, indications and results concerning of impairment of perfusion and function of myocardium of the left ventricle. There were compared normal values of ejection fractions (EF) of gated SPECT (evaluated by software 4D-MSPECT) with normal values of 3D echocardigraphy.
37 children aged 7 do 18 years underwent cardiac gated SPECT imaging in the Clinic of Nuclear Medicine and Endocrinology in the University Hospital Motol in years 2002-2008. The main indications for examinations were: anomalous origin of the left coronary artery, transposition of the great arteries after arterial switch operation, Kawasaki disease, stress related ST depresion on ECG and chest pain. From 37 patients had normal result 19 children, abnormal result 18. The totale count of cardiac SPECT studies are 68 (some patients had stress and rest examination). 53 studies are gated (35 after stress, 18 in the rest). 15 patient underwent non gated SPECT study. At 15 children who underwent gated SPECT study in the last 2,5 year evaluated by use of 4DMSPECT software we compare normal values of ejection fraction calculated by gated SPECT to normal values of EF of echocardiography. The normal values of EF LV of gated SPECT are higher then 70%. The normal values of 3D echocardiography are approximatelly 60%. This difference is explained on the basis of smaller hearts, with high rate of scatter which causes underestimation of volum of the left ventricle and abnormal high values of ejection fraction.