

Prevalence of hypertension in children after early repair of coarctation of the aorta

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Introduction: Aortic coarctation is associated with an increased risk of hypertension even when corrected successfully at an early age. Previous studies have associated this risk to increased arterial stiffness and dysfunction of the baroreceptor reflex.

Purpose and Methods: Retrospective descriptive study analysing hypertension prevalence, in a group of 37 patients born between 1994 and 2006, with coarctation of the aorta who underwent surgical repair in the first year of life, with a minimum follow-up of five years. Hypertension was defined as blood arterial pressure (BP) greater than the 95th percentile for age and sex, measured by 24 hour ambulatory blood pressure monitoring (ABPM) placed in the right upper limb. Transthoracic echocardiography was performed in all patients to exclude recoarctation.

Results: Patients under five or over eighteen years, with recoarctation, deceased, with complex congenital heart disease, which aren't followed by our department or impossible to contact and refused to participate were excluded. In 27% there were no associated cardiac malformations and in the other group the following heart lesions were found: bicuspid aortic valve in 49%, ventricular septal defect in 22% and mitral valve disease in 16%. Age at surgery ranged from three days to eleven months with a median of 44 days. The end to end anastomosis surgical technique was adopted in 57% of the cases, construction of a subclavian flap in 30% and mixed technique in 13%. None of the patients performed a second surgery. The median age at the time of placement of the ABPM was 9 years, with a prevalence of arterial hypertension in 46%, 24% nondipper type. In our hypertensive group, there were no significant association with the surgical technique, with 47% corrected with end to end anastomosis, 47% with aortoplasty with construction of a subclavian flap and 6% with mixed technique.

Conclusions: In our population, we verified the prevalence of arterial hypertension in about half of the patients. This is consistent with the literature, that considers hypertension as a major concern at a long term follow-up, even in early corrected aortic coarctation patients.