

Prevalence of arterial hypertension in children and adolescents after repair for coarctation: impact of the concomitant presence of complex congenital heart disease

*Giordano U., Chinali M., Franceschini A., Cafiero G., Turchetta A., Iorio F.S., Giannico S.
Department of Pediatric Cardiology and Cardiac Surgery - Bambino Gesù' Children's Hospital - Rome
- Italy*

Objective: This study was designed to evaluate the difference in prevalence of arterial hypertension among patients depending on the existence of associated congenital lesions.

Methods: We identified 235 children that were divided into two groups: those with isolated coarctation of the aorta and those with coarctation associated with complex congenital heart disease who had undergone biventricular correction and the data were retrospectively analyzed.

Results: There were 148 with isolated coarctation of the aorta and 87 with complex coarctation of the aorta. Patients were defined as hypertensive if they required antihypertensive treatment and/or when blood pressure was above 95th percentile. Patients with isolated coarctation of the aorta were significantly older than patients with complex coarctation of the aorta ($p < 0.001$) with a markedly higher prevalence of arterial hypertension (44% vs 24%) in the isolated coarctation of the aorta group. The difference in the prevalence of hypertension remained significant in an analysis of covariance correcting for differences in age among groups ($p < 0.001$) demonstrating that the risk of developing hypertension for patients with complex coarctation of the aorta was reduced by more than a half as compared to isolated coarctation of the aorta (odds ratio 0.48).

Conclusions: We conclude that in patients after surgery for coarctation of the aorta, the association with complex congenital heart disease results in a significant reduced prevalence of late hypertension. Low systemic flow and pressure before surgery in patients with complex coarctation of the aorta might be associated with a lower rate of arterial hypertension