

Percutaneous Intervention by Stent Implantation in Aortic Coarctation in Children Under 30 kg

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OBJECTIVE

There is vast experience in percutaneous treatment of coarctation of the aorta (CoA) in larger patients. Our aim was to describe results and evolution in a younger population under 30 kg with (CoA) and recoarctation treated by stent implantation.

METHODS

Retrospective review of all patients with native coarctation and recoarctation treated percutaneously by stent implantation in our centre between 2004 and 2015. Patients were divided in two groups according to weight. Groups were compared in treatment effectiveness, complications and need for reintervention.

RESULTS

Fifty-three patients were included in our study, of these, 19 were less than 30 kg (group I) compared to the other 34 (group II). Median time of follow up was similar in both groups (5.1 Vs 5.7 y). Median age of group I was 5.2 years old, range [0.02 to 8.1 y] and median weight 17 kg, range [3.5 to 27.4 kg]. Coarctation diameter was standardized with the descending aortic diameter (ratio CoA/Dao). No significant differences were found between these two groups in ratio CoA/Dao pre- and post- stent implantation. The mean minimum diameters of CoA (group I 4.2 to 9.1 mm; group II 7.1 to 12.4 mm) and the ratio CoA/Dao (group I 0.39 to 0.85; group II 0.45 to 0.76) increased significantly in both groups (all $p < 0.005$). Furthermore, no differences in residual systolic gradient were found between the two groups. Large redilatable stents (CP stents) were used in all cases except in two patients in group I where pre-mounted stents were implanted as salvage therapy. Complications were: one aortic aneurism in each group resolved with covered stent implantation and one stent migration to the thoracic aorta in group II. No patient in either groups required further surgery related to stent implantation. No significant differences were found in percutaneous reintervention (38,5% Vs 32,3%) and neither in time until first stent redilatation (3.5 Vs 2.5 y).

CONCLUSIONS

Stent implantation for coarctation treatment seems a successful and safe procedure even in younger patients with lower weights. Nevertheless long-term outcomes of stent implantation in these small patients with CoA are still needed