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Single center experience in usage of the ultrahigh pressure balloons in dilatation of rigid vessel stenosis in patients with congenital heart disease

Pursanov M.G., Chiaurelly M.R., Sobolev A.V., Atajanov U.U.

A.N. Bakoulev Scientific Center for Cardiovascular Surgery, Moscow, Russian Federation

Objective. to exam our experience in usage of UHPB in patients with CHD and rigid vessel stenosis in various vascular systems.

Materials and methods. During the period from April 2015 until January 2017 PTBA of 58 various vessel segments was performed in 47 pts. Patients age varied from 6 months to 32 years (10,34+5,57 years) and weight from 4,6 kg to 96 kg (39,4+22,6 kg). In 30 (63,8%) patients were previously performed ineffective repeated PTA (12-16 atm).

Balloon dilatation using UHPB were performed in 37 pts with pulmonary artery stenosis (48 segments); in 4 pts with aortic isthmus coarctation; 1 patient with stenosis of right ventricle-pulmonary artery conduit; in 1 patient with superior vena cava (SVC) stenosis. Pulmonary artery PTBA were performed after right ventricle outflow tract reconstruction in 21 patients due to tetralogy of Fallot, in 14 after radical surgery in complex CHD, in 4 after bidirectional cavopulmonary anastomosis.

Results. Usage of the UHPB was examined according to a full balloon expansion. In 98,3 % of all cases (57 of 58 segments) of PTBA full expansion to the nominal volume were achieved. Only in 1 case (1,7 %) we were unable to achieve full expansion of the UHP due to fracture of previously implanted pulmonary artery stent. We've registered no complications associated with usage of UHPB.

Conclusion. Usage of UHPB is an effective and safe method of managing rigid stenosis of various vascular systems, allowing to eliminate stenosis in 98,3% of cases.