

**Multiple interventional procedures in patients after multi-stage treatment of single ventricle - one center experience.**

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**Introduction.** The patients after multi-stage treatment of single ventricle often have various complications associated with changed physiology of circulation. Often, this situation requires a number of corrective procedures. In this paper, we present a single center experience in percutaneous performing several procedures during one session.

**Methods.** We analyzed patients after staged palliation of single ventricle treated in our hospital in last 10 years. The majority of them were catheterized in intention of some kind of percutaneous treatment. Multi-procedural treatment was performed in 14/86 (16%) patients, weighted  $12,1 \pm 2$  kg (range:10,5-18). The mean age was  $34 \pm 7,8$  (range:24-50) months. Ten of them were diagnosed as HLHS previously and were operated in accordance with Norwood strategy. The completion of Fontan physiology was performed in 3/14 patients. The percutaneous treatment was made  $20,2 \pm 7,7$  months (range:1-35) after last surgical operation.

**Results.** There were performed 33 interventional procedures during 14 treatment sessions (2,35 procedures/1 patient): 2 procedures in 19 patient, 3 in 5 patients during one anesthesia. Stents to pulmonary artery (PA) were implanted in 9 patients, PA-angioplasty was performed in 5, angioplasty of neo-aorta-aorta connection in 8, vascular fistula was closed in 7 (including 2 recanalized additional left superior caval vein), inferior caval vein plasty was performed in 2, angioplasty of connection of superior caval vein with PA in 1 and dilation of fenestration using cutting balloon in 1 patient. The most common combination of treatment was: stent implantation to PA with angioplasty of neo-aorta-aorta (8 patients) and closure of fistula with angioplasty or stent implantation to PA ( 6 patients). In 1 patient the arterial dissection appeared after PA-plasty and stent implantation was performed consequently. During the follow-up ( $20,6 \pm 6,2$  months) in 1 patient after angioplasty of neo-aorta-aorta and stent implantation to PA, the aortic restenosis and the stent fracture occurred after 10 months. Therefore second aortic angioplasty, second stent implantation and closure of the vascular fistula were performed.

**Conclusion.** Methods of interventional cardiology may eliminate the adverse effects of Fontan-type correction, even in the presence of multiple clinical problems. They often allow to avoid extensive cardiac surgery, and the complication rate is very low.