A REFERRAL CENTER EXPERIENCE WITH CEREBRAL PROTECTION DEVICES: CHALLENGING CARDIAC THROMBUS IN THE EP LAB

Jan Berg,[1], Alberto Preda,[1], Nicolai Fierro,[1], Andrea Radinovic,[1], Patrizio Mazzone,[1]

[1] Division of Arrhythmology, San Raffaele Hospital, Milan, Italy

Background:

Cerebral protection devices (CPD) are designed to prevent cardioembolic stroke and most evidence exists for TAVI procedures. There is missing data on benefit of CPD in patients that are considered high risk for stroke undergoing cardiac procedures like left atrial appendage (LAA) closure or catheter ablation of ventricular tachycardia (VT) when cardiac thrombus is present.

Purpose:

To examine feasibility and safety of the routine use of CPD in patients with cardiac thrombus undergoing interventions in the electrophysiology (EP) lab of a large referral center.

Method:

The CPD was placed under fluoroscopic guidance in all procedures in the beginning of the intervention. Two different CPDs were used according to the physician's discretion: 1) a capture device consisting of two filters for the brachiocephalic and left common carotid arteries placed over a 6F sheath from a radial artery; or 2) a deflection device covering all three supra-aortic vessels placed over a 6F femoral sheath. Retrospective periprocedural and safety data were obtained from procedural reports and discharge letters. Long-term safety data were obtained by clinical follow-up in our institution and telephone consultations.

Results:

We identified 29 consecutive patients (20 LAA closure, 9 VT ablation) in our EP lab who underwent interventions with placement of a CPD due to cardiac thrombus. Mean age was 70±10 years and 72% were male, mean LVEF was 39±13%. The location of the cardiac thrombus was the LAA in all 20 patients (100%) undergoing LAA-closure whereas in patients undergoing VT ablation, thrombus was present in the LAA in 5 cases (56%), left ventricle (n=3, 33%) and aortic arch (n=1, 11%). The capture device was used in 19 out of 29 (66%) and the deflection device in 10 out of 29 cases (34%). There were no periprocedural strokes or transitory ischemic attacks (TIA). CPD-related complications comprised the vascular access and were the following: Two cases of pseudoaneurysm of the femoral artery not requiring

CSI EDUCATION

surgery (7%) and 2 cases of hematoma at the arterial puncture site (7%). There was 1 in-hospital death after VT ablation due to cardiogenic shock, not related to the CPD. At long-term follow-up, 1 TIA and 2 non-cardiovascular deaths occurred with a mean follow-up time of 596 days.

Conclusion:

Placement of a cerebral protection prior to LAA closure or VT ablation in patients with cardiac thrombus is feasible with an acceptable safety profile regarding vascular complications. A benefit in periprocedural stroke prevention seems plausible but has yet to be proven in larger and randomized trials.

CSI EDUCATION