COMPLICATIONS OF IMPLANTABLE CARDIAC-DEFIBRILLATOR IMPLANTATION IN PATIENTS WITH PULMONARY HYPERTENSION

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Background: Pulmonary hypertension is associated with significant changes in the right heart. The safety of performing Implantable Cardiac Defibrillator (ICD) implantation in these patients is not well evaluated.

Methods: We performed a retrospective analysis of all consecutive patients who had a clinical diagnosis of PHTN and underwent right heart catheterization for confirmation of the same. We then identified, among them, all patients undergoing ICD implantation at our center. Baseline characteristics, procedural variables and complications were collected and analyzed.

Results: Of the 311 patients with documented PHTN, 50 (16%) underwent ICD implantation of which 35 (70%) were biventricular-ICDs and 15 (30%) were ICDs. Mean age of the population was 63 years with 27 (54%) females. The mean systolic pulmonary artery pressure (SPAP) and mean pulmonary artery pressure (mPAP) were 56 and 38mm of Hg. The mean left ventricular ejection fraction was 24%. 26 (52%) had ischemic cardiomyopathy and the rest had non-ischemic cardiomyopathy. 26 (52%) were on chronic anticoagulation with warfarin, 42 (84%) were on aspirin and 6 (12%) were on plavix. Total of 15 (30%) patients had an in-hospital complication. Of these 5 (10%) had a pocket hematoma, 7 (14%) needed a lead repositioning, 3 (6%) has a pericardial effusion which were managed conservatively, 1 (2%) had pneumothorax and 1(2%) patient needed pocket revision for severe post-procedure pain. There were no differences between the age, PSAP, mPAP, LVEF and device type on the complication rate. The only predictor of complication was use of Aspirin (36% vs 0%; p =0.04). The overall complication rate was higher than 3-5%, as seen in historical controls.

Conclusion: In this single center study, the complications of ICD implantation in patients with PHTN is higher than historical data, especially lead dislodgement requiring repositioning. This is probably related to the significant structural changes in the right heart in PHTN patients.