New onset Left Bundle Branch block after TAVR: EP study guided pacemaker implantation

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Introduction: Transcatheter Aortic Valve Replacement (TAVR) has now become the dominant method of aortic valve replacement in the United States, with excellent outcomes. New onset LBBB (NLBBB) is seen in up to 20% of patients post TAVR. There has not been a broad consensus about protocols regarding permanent pacemaker (PPM) placement in these cases, though the death and urgent pacemaker placement in this group is about 23%. The question remains, how do we evaluate the need for PPM placement in these patients. We developed an EP study guided protocol with administration of procainamide. PPM was implanted if the baseline HV interval is ≥ 80 ms during the EP study, if not, then patients were administered 1000 mg of procainamide over 10 min infusion, if the HV interval prolonged to 80 ms or greater then PPM was implanted. Here we report our findings.

Methods: Retrospective data was collected about patients with new onset LBBB post TAVR between 2017 and 2019. Baseline characteristics, including valve type, age, gender, ECG findings, EF, HV interval pre and post procainamide infusion was recorded. Outcomes assessed were, need for future pacemaker placement, survival and follow up Ejection Fraction (EF).

Result: Total of 81 patients underwent TAVR during this time period, 11 patients had NLBBB (13.6%). Baseline QRS duration was 99±11ms. Post TAVR QRS duration was 141±12, HV interval was 61.9±9 ms, HV interval post procainamide was 66.8±14 ms. PPM was placed in 9% of the patients. Follow up was 11.8±7 months. There were no deaths, no additional or urgent need for PPM, EF remained steady at 60±9.7%.

Conclusion: Our study shows that EP study guided PPM placement in NLBBB leads to lower rate of PPM placement post TAVR (9% compared to 23% in the standard published literature) and also has excellent long-term outcome, with no death or additional need for PPM placement. Data collected in larger group of patients and/or randomized study is needed to solidify these findings.