

Non-invasive predictors for infranodal conduction delay in patients with left bundle branch block after transcatheter aortic valve replacement

Auberson C.; Badertscher P.; Madaffari A.; Malushi M.; Bourquin L.; Spies F.; Aeschbacher S.; Fahrni G.; Kaiser C.; Jeger R.; Osswald S.; Sticherling C.; Kuehne M.; Knecht S.

University Hospital Basel, Cardiology, Basel, Switzerland

Funding Acknowledgements: Type of funding sources: None.

Introduction: Left bundle branch block (LBBB) is the most common conduction disorder after transcatheter aortic valve replacement (TAVR) with an increased risk of atrioventricular (AV) block. The aim of the current study was to identify non-invasive predictors for infranodal conduction delay in patients with LBBB.

Methods: We analyzed consecutive patients undergoing TAVR with pre-existing or new-onset LBBB between August 2014 and August 2020. His ventricular (HV) interval measurement was performed on day 1 after TAVR. Baseline, procedural, as well as surface and intracardiac electrocardiographic parameters were included. Infranodal conduction delay was defined as HV interval >55 ms.

Results: Of 825 patients screened after TAVR, 151 patients (82 ± 6 years, 39% male) with LBBB were included. Among these, infranodal conduction delay was observed in 25%. ΔPR (difference in PR interval after and before TAVR), PR and QRS duration after TAVR were significantly longer in the group with HV prolongation. In a multivariate analysis in patients with sinus rhythm (n = 131), ΔPR (OR per 10 ms increase: 1.52; 95% CI: 1.19-2.01; p = 0.002) was the only independent factor associated with infranodal conduction delay. The AUC of the ROC curve was 0.724 (95% CI) for ΔPR. A change in PR interval by 20 ms yielded a sensitivity of 26% and specificity of 83% with a positive predictive value of 45% and a negative predictive value of 84% to predict HV prolongation.

Conclusions: Simple analysis of surface ECG and a calculated ΔPR <20ms can be used as predictor for the absence of infranodal conduction delay in post-TAVR patients with LBBB.

Abstract Figure HV

