PERI-PROCEDURAL TAMPONADE DURING TRANSCATHETER AORTIC VALVE INSERTION (TAVI): STANDARD VS BALLOON-TIPPED TEMPORARY PACING WIRES: A 3-CYCLE AUDIT

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Abstracts

Introduction
Transcatheter aortic valve insertion (TAVI) is an established minimally invasive procedure for patients with symptomatic, severe aortic stenosis deemed to be at high surgical risk. As TAVI continues to advance toward intermediate and low surgical risk patients, minimising peri-procedural complications will be paramount in sustaining the clinical benefit of the procedure. One such peri-procedural complication is cardiac tamponade. Cardiac tamponade can result from ventricular perforation by a temporary pacing wire (TPW), which is itself necessary to insert when complete heart block arises during aortic valve insertion. We sought to compare the risk of peri-procedural tamponade associated with the two most frequently deployed TPWs at the Oxford Heart Centre.

Methods
We liaised with local stakeholders to gauge the importance of this question to patients with severe aortic stenosis attending the Oxford Heart Centre. We conducted three cycles of data collection in the John Radcliffe hospital starting in August 2019 and finishing in July 2021. To ascertain the risk of tamponade in procedures involving either the standard TPW or balloon-tipped TPW, we cross-referenced procedural recordings, from which the type of TPW could be identified, with Oxford TAVI (OxTAVI) registry data on tamponade incidence. In accordance with a pre-specified analysis plan, all data was analysed using STATA version 15 software.

Results
Peri-procedural tamponade occurred in 15/395 (3.8%) procedures involving a standard TPW vs 2/40 (4.7%) procedures involving a balloon-tipped wire (Figure 1). In comparison to use of the standard wire, the relative risk (RR) of peri-procedural tamponade using a balloon-tipped wire was 1.54 with an associated 95% Confidence Interval of 0.30 to 5.30. Consistent with this, a two-sided Fisher’s Exact test result was non-significant (P-value = 0.6367).

Conclusion
No significant difference was observed in the risk of peri-procedural tamponade using a balloon-tipped wire in comparison to the standard pacing wire during trans-femoral TAVI procedures conducted at the John Radcliffe hospital between August 2019 and July 2021. The results were presented to the lead for clinical governance at the Oxford Heart Centre and local practice has now been changed to allow for both balloon-tipped and standard temporary pacing wires are being procedurally deployed in the Oxford University Hospitals Trust during TAVI. An additional cycle of data collection and collaboration with other high-volume TAVI centres will improve generalisability and increase statistical power.

Conflict of Interest
No