

Percentage of ventricular pacing in patients receiving a permanent pacemaker after transcatheter aortic valve implantation

Alexander Rixe, MD; Mohamed Abdel-Wahab, MD; Suzanne de Waha, MD; Mohamed El Mawardy, MD, Ken Gordian, MD, Gert Richardt, MD

Heart Center Segeberger Kliniken, Bad Segeberg / Germany

Background:

Transcatheter aortic valve implantation (TAVI) is an established therapy for inoperable and high-risk patients with severe symptomatic aortic stenosis. Due to anatomical reasons conduction disturbances leading to permanent pacemaker (PPM) implantation are frequent after TAVI. However, the threshold and indications of PPM implantation are variable, and the frequency of long-term permanent pacing has not been previously studied.

Methods:

From September 2007 to February 2014, 413 TAVI procedures were performed at a single institution. Ninety-seven patients (23.5%) received a PPM. Of these, 73 patients (75.3 %) had a PPM follow-up analysis 3 months after implantation (58 patients treated with the self-expandable CoreValve device, 10 with the balloon-expandable Edwards Sapien XT valve, and 5 patients with the mechanically-expanding Lotus Valve).

Results:

The patients' mean age was 81 years (SD 79-85 years). The main indication for PPM implantation was complete atrioventricular (AV) block (43.8%), followed by the combination of first-degree AV block and left bundle branch block (LBBB; 28.8%). The mean percentage of ventricular pacing at 3 months in all patients receiving a PPM after TAVI was 28%. 17.8% of patients had a percentage of ventricular pacing < 0.1%. This percentage was even higher (32.3%) among patients who received the PPM for causes other than complete AV block (first degree AV block plus LBBB or LBBB alone).

Conclusion:

A significant percentage of patients receiving a PPM after TAVI did not require permanent pacing up to 3 months after the procedure. Further studies aiming at determining the individual necessity of a PPM after TAVI and establishing solid PPM indications are warranted.