

Renal Function after Transcatheter Aortic Valve Implantation: Better than Expected

*Perlman, Gidon; Loncar, Sasa; Alcalai, Roni; Pollack, Arthur; Lotan, Chaim; Danenberg, Haim
Hadassah Hebrew University Medical Center, Cardiology, Jerusalem, Israel*

Background: Patients with severe symptomatic aortic stenosis (AS) have lately been treated by Transcatheter Aortic Valve Implantation (TAVI). These patients are often elderly with multiple co-morbidities including renal dysfunction. Worsening renal function after TAVI has been reported, with a small proportion of the patients needing hemodialysis. In 2011 the Valve Academic Research Consortium (VARC) published its definitions for Acute Kidney Injury (AKI) after TAVI. We report the renal consequences of patients undergoing TAVI at our institution.

Methods and Results: Eighty-two consecutive TAVI patients were included in this analysis. Demographic, clinical, procedure-related and post-procedural variables were assessed. Mean age was 80.9 ± 6.3 , Logistic Euroscore was 23 ± 14.9 , Mean creatinine level at baseline was 99 ± 31.9 $\mu\text{m}/\text{ml}$ and mean GFR was 52.8 ± 18.7 mL/min . According to VARC definitions 12 patients (14.6 %) experienced mild AKI (stage 1) and only one patient (1.2%) had moderate AKI (stage 2) which was secondary to cardiac tamponade and resolved after pericardiocentesis. There were 3 in-hospital deaths none of whom had AKI after TAVI, most patients with AKI returned to their baseline kidney function before discharge. Baseline characteristics associated with AKI were lower GFR and a prior history of HTN but these did not reach statistical significance. Significant bleeding (at least 3 g/dl) was associated with an increased occurrence of stage 1 AKI. Excessive hypertension after TAVI was not associated with a higher incidence of AKI.

Discussion: TAVI patients are much older than the usual cathlab patients and suffer from multiple co-morbidities. However, renal failure following TAVI is not prevalent and when it occurs it is usually mild and transient. Special attention should be given to pre- and peri-procedural hydration, prudent use of contrast media during the procedure, avoidance of blood loss and intensive post procedural hemodynamic monitoring.