

Different impact of sex on baseline characteristics and major periprocedural outcomes of transcatheter and surgical aortic valve interventions: Results of the multicenter Italian OBSERVANT Registry

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Abstract

BACKGROUND:

Despite the widespread use of transcatheter aortic valve implantation (TAVI), the role of sex on outcome after TAVI or surgical aortic valve replacement (AVR) has been poorly investigated. We investigated the impact of sex on outcome after TAVI or AVR.

METHODS:

There were 2108 patients undergoing TAVI or AVR who were enrolled in the Italian Observational Multicenter Registry (OBSERVANT). Thirty-day mortality, major periprocedural morbidity, and transprosthetic gradients were stratified by sex according to interventions.

RESULTS:

Female AVR patients showed a worse risk profile compared with male AVR patients, given the higher mean age, prevalence of frailty score of 2 or higher, New York Heart Association class of 3 or higher, lower body weight, and preoperative hemoglobin level ($P \leq .02$). Similarly, female TAVI patients had a different risk profile than male TAVI patients, given a higher age and a lower body weight and preoperative hemoglobin level ($P \leq .005$), but with a similar New York Heart Association class, frailty score, EuroSCORE ($P = \text{NS}$), a better left ventricular ejection fraction and a lower prevalence of left ventricular ejection fraction less than 30%, porcelain aorta, renal dysfunction, chronic obstructive pulmonary disease, arteriopathy, and previous cardiovascular surgery or percutaneous coronary intervention ($P \leq .01$). Women showed a smaller aortic annulus than men in both populations ($P < .001$). Female sex was an independent predictor in the AVR population for risk-adjusted 30-day mortality (odds ratio [OR], 2.34; $P = .043$) and transfusions (OR, 1.47; $P = .003$), but not for risk-adjusted acute myocardial infarction, stroke, vascular complications, permanent atrioventricular block ($P = \text{NS}$). Female sex was an independent predictor in the TAVI population for risk-adjusted major vascular complications (OR, 2.92; $P = .018$) and transfusions (OR, 1.93; $P = .003$), but proved protective against moderate to severe postprocedural aortic insufficiency ($P = .018$).

CONCLUSIONS:

Female sex is a risk factor for mortality after aortic valve replacement, for major vascular complications after TAVI, and for transfusions after both approaches.