Nature Reviews Cardiology **8**, 668 (2011); published online 8 November 2011; doi:10.1038/nrcardio.2011.166

VALVULAR DISEASE

The UK TAVI experience: insights from the 'real world'

The first report from the United Kingdom Transcatheter Aortic Valve Implantation (UK TAVI) Registry provides important new information on the mid-term and long-term outcomes of patients with severe, symptomatic aortic stenosis (AS) undergoing this procedure. Moat and colleagues write that this study is "unique in that it has captured every TAVI performed ... within England and Wales, and thus includes the entire 'learning curve' and early experience of adopting centers without any publication bias."

> "...this study ... includes the entire 'learning curve' and early experience [of TAVI in England and Wales]"

The earlier Placement of Aortic Transcatheter Valve (PARTNER) trial provided seminal data on 30-day and 1-year outcomes of patients with AS who were candidates for surgery (cohort A) or in whom the surgical risk was considered too great (cohort B). However, the enrollment criteria of the PARTNER trial were highly defined and, therefore, the characteristics of these patients are not necessarily representative of individuals undergoing TAVI in the real world. In addition, we currently have very little data on outcomes in these patients beyond 1 year. The findings from the UK TAVI Registry are thus a welcome addition to the literature.

In their paper, Moat *et al.* report data spanning the period from the first implantation conducted in the UK in January 2007, up to the end of December 2009. All 25 TAVI centers in England and Wales provided information on every procedure performed—a total of 870 patients (877 implants). The mean age of patients was 81.9 years.

The number of TAVIs increased from 66 in 2007 to 538 in 2009. Patient mortality was calculated up to 12 December 2010 (range of follow-up: 11–46 months). Two valve prostheses were available for implantation—the Edwards SAPIEN® (Edwards Lifesciences, Irvine, CA, USA) and the CoreValve® (Medtronic CV Luxembourg S.a.r.l, Luxembourg), which were used in 410 and 452 patients, respectively. The majority (69%) of patients underwent transfemoral TAVI (90% of CoreValve® prostheses were implanted this way); however, approximately half of the Edwards SAPIEN® valves were implanted transapically. Patients whose procedures were conducted with a nontransfemoral approach had a higher prevalence of coronary artery and peripheral vascular diseases, renal dysfunction, and more-severe symptoms than those who underwent a transfemoral procedure.

No differences in the incidence of myocardial infarction or stroke at 30 days were evident between transfemoral and nontransfemoral access or between the two devices. However, a pacemaker was needed more often in those with a CoreValve® than in those with a SAPIEN®. The CoreValve® was also associated with a increased incidence of paravalvular aortic regurgitation (AR). Survival at 30 days, 1 year, and 2 years among the whole cohort was 92.9%, 78.6%, and 73.7%, respectively.

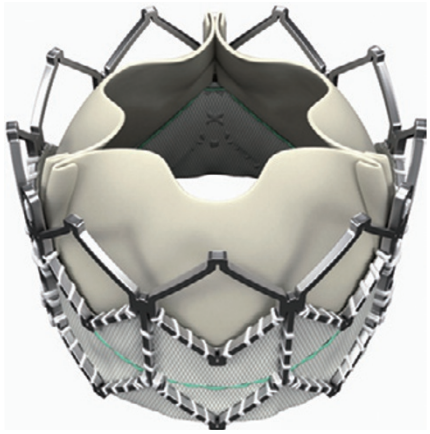

Image courtesy of Edwards Lifesciences

The rate of death declined with time; 21.4% of patients died within the first year, but only 4.9% died between 1 and 2 years. Nontransfemoral access was associated with greater mortality than transfemoral access at all time points. No mortality difference was observed between the two types of valve. In multivariate analysis, the only independent predictors of mortality were chronic obstructive pulmonary disease, left ventricular ejection fraction <30%, and moderate or severe AR. This last factor is noteworthy, as 61% of patients in the registry had some degree of AR. Continued analysis of data from this ongoing registry will increase our knowledge of TAVI and guide procedures well into the future.

Alexandra King

Original article Moat, N. E. *et al.* Long-term outcomes after transcatheter aortic valve implantation in high-risk patients with severe aortic stenosis: the UK TAVI (United Kingdon Transcatheter Aortic Valve Implantation) Registry. *J. Am. Coll. Cardiol.* doi:10.1016/j.jacc.2011.08.050