Surgical & Transcatheter Interventions of Aortic Stenosis

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The advent of transcatheter aortic valve implantation (TAVI) signaled a paradigm shift for treating patients with severe aortic stenosis (AS). Not only has TAVI stimulated enormous development and innovation for a variety of transcatheter heart valve (THV) technologies, it has also resulted in a renewed interest in AS per se, with an intense focus on the comparative benefits of available therapeutic options. Current evidence points to the clinical superiority of TAVI vs. medical therapy in patients with critical AS deemed inoperable, and TAVI is now deemed equivalent to conventional surgical aortic valve replacement (SAVR) in severe AS patients at high surgical risk. Accordingly, there is now an ongoing quest to test the feasibility of TAVI in younger and lower surgical risk populations with AS. Despite enthusiasm for high rates of device-related procedural success, the success of monitored anesthesia care without the need for endotracheal intubation, and relatively low rates of procedural mortality, the sobering reality is that a substantial portion of these individuals fail to derive long-term functional improvement post-TAVI. Accordingly, considerable interest lies in the ability to better identify those individuals least likely to derive benefit from TAVI. An emerging consensus on the importance of frailty as a predictor of procedural success following a range of cardiovascular procedures, and incorporating a more holistic approach to baseline assessment is likely to better identify those patients in whom TAVI is likely to be futile. The development of multivariate risk scores combining variables reflecting cardiac and non-cardiac conditions and frailty appears attractive in this setting.