Utility of the 5 Meter Walk Test Post Transcatheter Aortic Valve Replacement

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Background & Purpose: The transcatheter aortic valve replacement (TAVR) procedure is an alternative aortic valve replacement for patients (pts) with severe and symptomatic aortic stenosis. These pts present with quick-onset dyspnea on exertion which significantly limits their ability to ambulate in the community. Appropriate pts have a high surgical risk as defined by the Society of Thoracic Surgery (STS) Adult Cardiac Surgery Risk score. The 5-Meter Walk Test (5MWT) is recommended by the STS to predict frailty in candidates for TAVR. The purpose of this case series is to assess the utility of the 5MWT to compare pre and post-operative changes in gait speed (GS) following a TAVR in the acute care setting.

Case Description: Four female and 7 male pts with an average age of 82 were selected from a convenience sample at an acute care hospital. All patients were status post TAVR, with all procedures performed by the same surgeon between April and June of 2015. Pre-operative 5MWTs were performed at the outpatient office of the operative surgeon. The results and whether an assistive device (AD) was used were recorded. Focusing on early mobility, pts received physical therapy from post-op day 0 through the entirety of their stay. On the day closest to discharge, pts 5MWT GS was recorded.

Outcomes: Of the 11 pts included, 4 demonstrated improved GS while 7 had a decreased GS. The average pre-op GS was 0.64 m/s while the average post-op GS was 0.56 m/s.

Discussion: The majority of pts did not have improvements in GS during their acute care hospital stay, suggesting that the 5MWT may not capture meaningful data in the early recovery phase. An objective change in GS may not have occurred for several reasons. First, there were different administrators of pre and post 5MWTs. Second, PTs occasionally incorporated ADs during testing to facilitate safety and independence. The use of an AD has been shown to decrease GS. Finally, in specific cases pts may have had decreased GS due to complications of their hospital stay, including pacemaker insertion, prolonged bedrest, or ICU stay. While improvements in GS were not noted overall, there were clear functional benefits following the procedure. Almost all pts were discharged to their pre-admission residence. Subjectively, pts endorsed greater exercise tolerance and decreased pre-operative symptoms, leading to an improved quality of life. This, in conjunction with PT observations, suggests that a measure of
endurance, such as the 2 Minute Walk Test, may be more appropriate to employ in this population. Upon discharge, pts were given written instructions to encourage ambulation for a goal of 20 minutes daily. We surmise that 5MWT scores will improve over time. Thus, in order to more accurately depict the long term effect of a TAVR on GS there is a need for a follow-up 5MWT to be performed after discharge from the acute setting. As the advent of the TAVR greatly increases the potential number of pts eligible for aortic valve replacements, and since current research is limited on GS and TAVR, further research is warranted.

**References: Must include 5 current references (less than 10 years old):**


