The Effect of TAVR on the Treatment of Aortic Stenosis in a Large US Metropolitan Area

Elizabeth M. Holper MD MPH1, James Edgerton MD2, Morley Herbert PhD1, Syma Prince3, Karen Roper3, Molly Szerlip MD2, Baron Hamman MD4, W. Steve Ring MD5, Michael Mack MD*2

INTRODUCTION

It has been postulated that the availability of a transcatheter aortic valve (TAVR) program for the treatment of aortic stenosis (AS) would also increase the number of patients referred for, and treated with surgical aortic valve replacement (SAVR)

The above relationship between TAVR and SAVR in a geographical area has not been well-studied

The goals of our study were to 1) evaluate the effect of TAVR on isolated SAVR trends in a large US metropolitan area and 2) evaluate the trend in the Society of Thoracic Surgery predicted risk of mortality (STS PROM) at TAVR and non-TAVR hospitals

METHODS

Data from the Texas Quality Initiative (TQI) was utilized for this study. TQI is a regional quality initiative of 27 hospitals in north Texas created in 2012 by the Dallas-Forth Worth Hospital Council Foundation, with centralized database of all the records in their Society of Thoracic Surgeons (STS) National Adult Cardiac Database

Data from TAVR and SAVR procedures performed from the years 2008-2012 were utilized. The number of TAVR and SAVR procedures at hospitals with and without a TAVR program were compared. Three of the hospitals had a TAVR program and 24 had only a SAVR program. Comparison to national STS SAVR trends during the study period were performed

TAVR case counts were obtained from local hospital case logs

The impact of TAVR on patient selection for SAVR as measured by the STS PROM risk algorithm was also evaluated

RESULTS

Overall, the number of patients with AS treated increased from 626 in 2008 to 927 in 2012, a 48.1% increase. This increase is similar to the trend observed in the STS national database.

By 2012, 206 out of 927 AVR procedures (22.2%) were performed by TAVR

The number of SAVR procedures increased more at TAVR hospitals during the study years

STS PROM for SAVR patients was lower at non-TAVR versus TAVR hospitals (3.65 ±4.15; median 2.84 versus 4.13 ±4.31; median 2.82, p<0.001). The mean PROM at non-TAVR hospitals ranged from 3.3 to 3.9 while at TAVR hospitals the values ranged from 3.9 to 4.4

STS data includes 127,467 cases from over 1000 hospitals with cardiac surgery programs

CONCLUSIONS

In this large metropolitan area, there was a larger growth in SAVR procedures at TAVR programs as compared to those without TAVR

However, the majority of the increase in aortic valve procedures for aortic stenosis was due to TAVR

There was a shift toward higher risk patients being treated at TAVR programs

The findings in this region are similar to those reported in the TVT registry