

Initial Three-Year Review of Transcatheter Aortic Valve Replacement (TAVR) Program Launch at a Tertiary Academic Community Hospital

Tara Stansbury
Lehigh University

Raymond Singer MD
Lehigh Valley Health Network

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Published In/Presented At

Stansbury, T.; Singer, R., (2015, July 31) *Initial Three-Year Review of Transcatheter Aortic Valve Replacement (TAVR) Program Launch at a Tertiary Academic Community Hospital*. Poster presented at LVHN Research Scholar Program Poster Session, Lehigh Valley Health Network, Allentown, PA.

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Initial Three-Year Review of Transcatheter Aortic Valve Replacement (TAVR) Program Launch at a Tertiary Academic Community Hospital

Tara Stansbury, Raymond Singer, M.D.
Lehigh Valley Health Network, Allentown, Pennsylvania

Background



Figure 1: Prosthetic valves implanted during surgical aortic valve replacement⁴

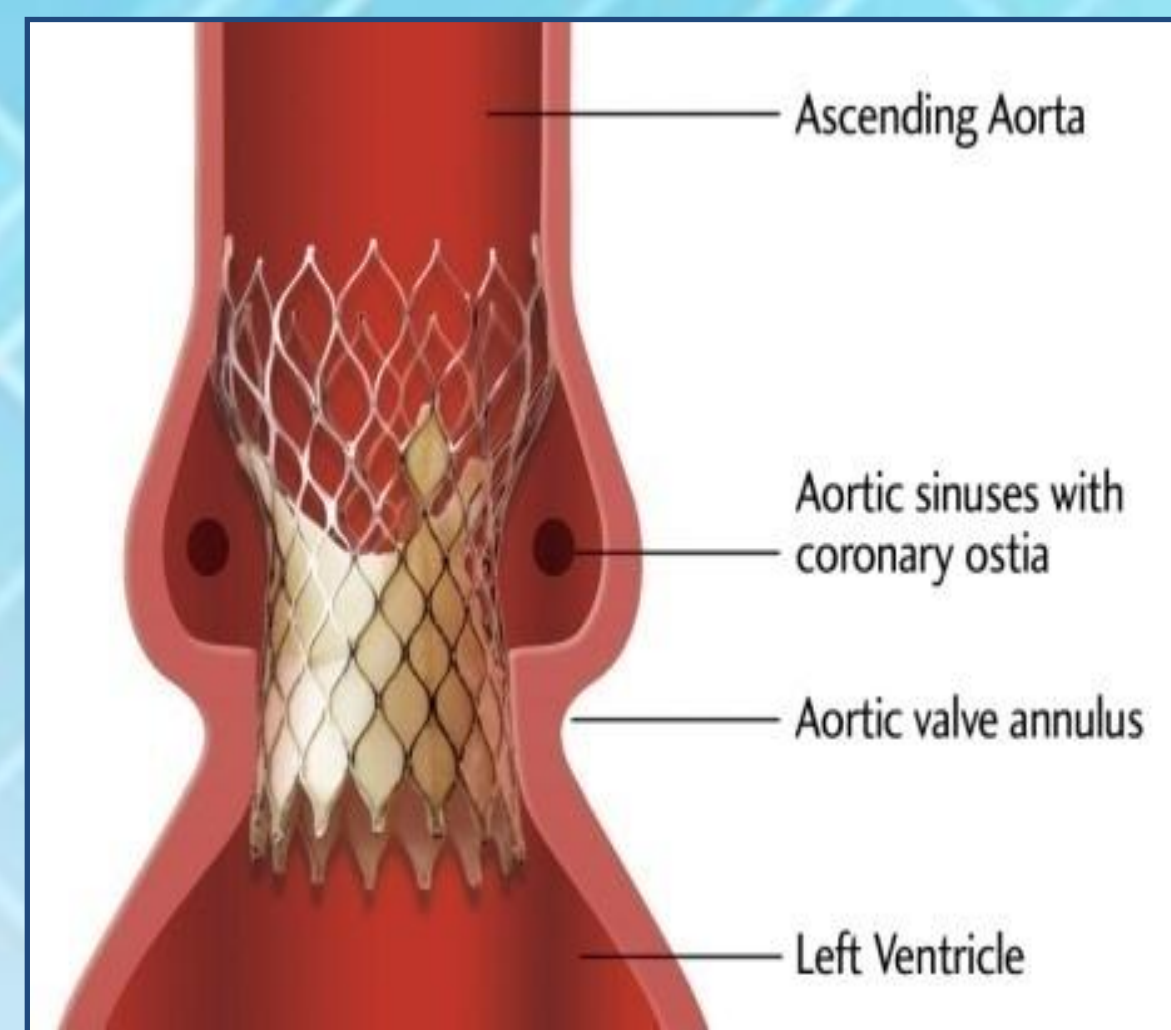


Figure 2: Prosthetic valve implanted during TAVR⁴

Severe Aortic Stenosis (AS) is the narrowing or obstruction of the aortic valve.¹ Transcatheter aortic valve replacement (TAVR) is a transformative procedure that avoids the need for conventional open-heart aortic valve replacement in high-risk patients.² TAVR uses a sheath to implant the prosthetic valve into the existing aortic valve. The catheter is fed into either the groin (transfemoral) or the chest (transapical) and then guided through the blood vessel into the aorta.³ Although the procedure is considered less invasive, it has not yet been cleared for low-risk patients. In order to be considered high-risk, the patient must have several comorbidities that prevent him or her from being a viable candidate for surgical aortic valve replacement.³

Methodology

A retrospective chart review was performed. The TAVR procedure was executed over the course of three years in patients with severe aortic stenosis. These patients were deemed high-risk for surgical aortic valve replacement during the TAVR clinic and were therefore considered to be good candidates for the TAVR procedure. Age, gender, comorbidities, patient mortality, stroke, and pacemaker implantation were determined by reviewing the patient records. All patients were evaluated to determine the mortality and stroke rates. Only patients without pacemakers prior to surgery were evaluated to determine the rate of pacemaker implantation after surgery. The comparison data from the PARTNER Trials was taken from the study, "Clinical Outcomes at 1 Year Following Transcatheter Aortic Valve Replacement."³

Results

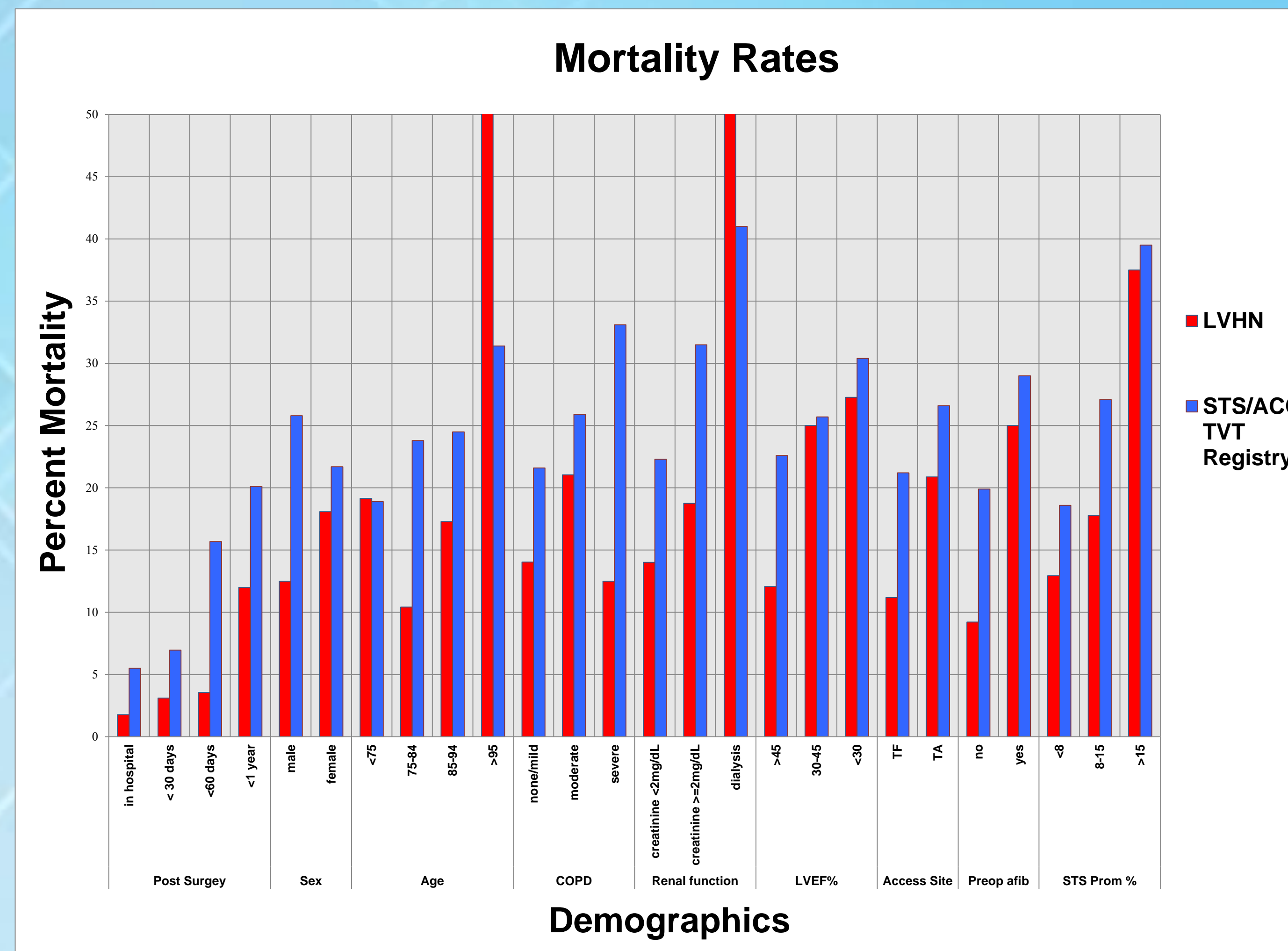


Figure 3: A comparison of the LVHN and STS/ACC TVT Registry³ Mortality rates for the various patient conditions and comorbidities.

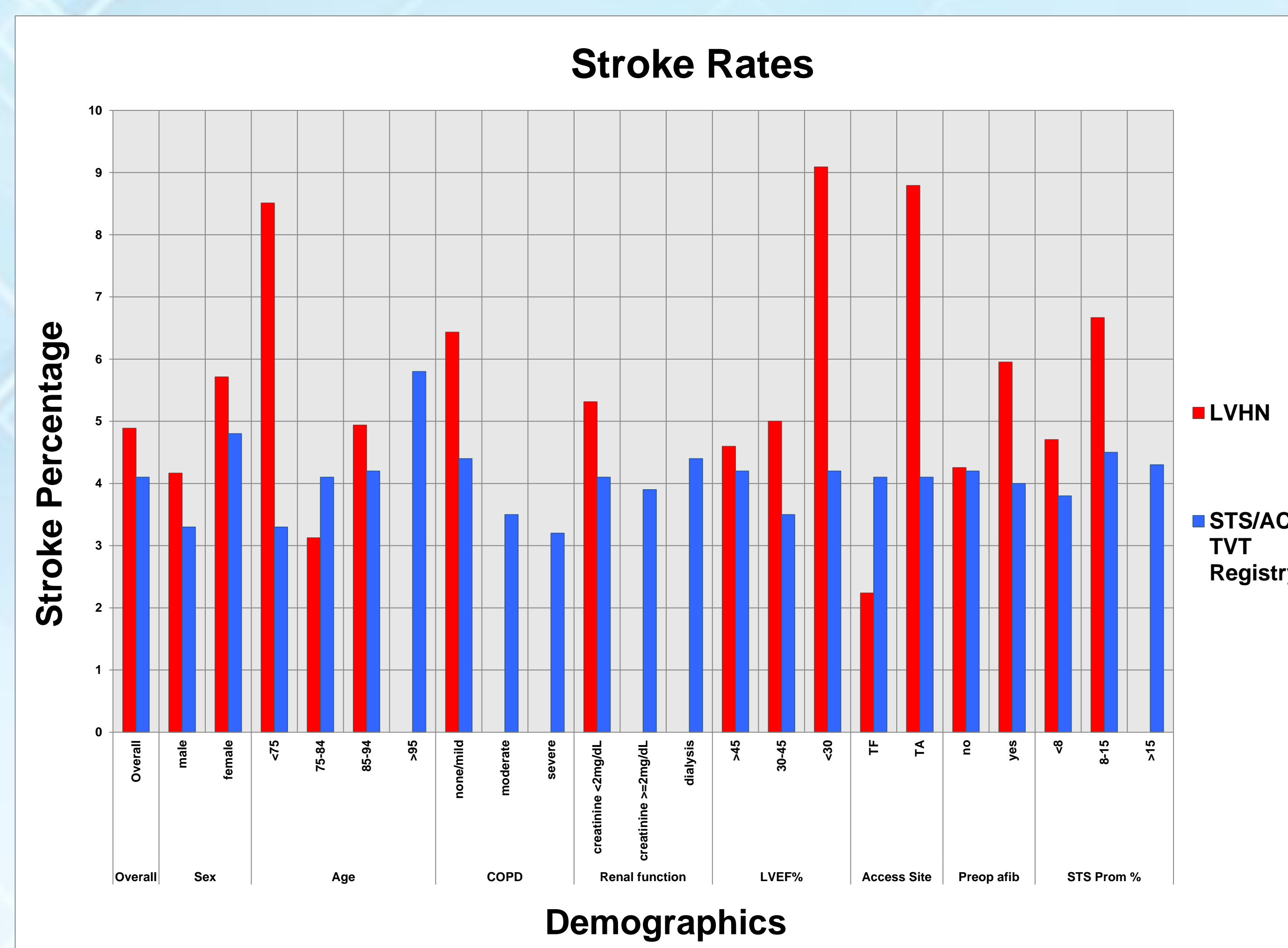


Figure 4: A comparison of the LVHN and STS/ACC TVT Registry³ Stroke rates for the various patient conditions and comorbidities.

A review of the first 3 years shows 225 TAVR procedures were performed, 134 Trans-Femoral (TF), 91 Trans-Apical (TA). The patient population was 120 men and 105 women, age ranging from 50 to 99, 41 of whom were less than 75 years old, 96 were 75 to 84 years old, 81 were 85 to 94 years old, and 1 was greater than 95 years old. The need for pacemaker was 41 (21.81%). The 4 in-hospital deaths were due to stroke (1), liver failure (1), cardiac failure (1), and hemorrhage (1).

Discussion

- Out of 26 conditions, only 3 of LVHN's mortality rates were higher than those of the STS/ACT registry and out of 23 conditions, 15 of LVHN's stroke rates were higher than those of the STS/ACT registry
- The low percentage of pacemaker implantation indicates that the patients often return to normal rhythm after surgery, which allows for an easier recovery.
- The TF approach has overall better outcomes. This is most likely because patients undergoing the TA approach often have coronary artery disease.
- Patients with less comorbidities, and therefore lower STS Prom %, had overall better outcomes.
- These results confirm that TAVR procedures can be performed safely at a tertiary academic community hospital with excellent outcomes.
- Factors predicting success include an existing high volume of interventional cardiology and cardiac surgical program, documented quality outcomes, a hybrid operating room, and the ability for the interventional cardiologists and cardiac surgeons to work as a collaborative team.
- The limitation to this study includes the low number of patients so there were some underrepresented demographics.

REFERENCES

1. Carabello, B. (2013). How Does the Heart Respond to Aortic Stenosis: Let Me Count the Ways. *Circulation Cardiovascular Imaging*, 858-860.
2. Rodés-Cabau J, Webb JG, Cheung A, et al. Transcatheter Aortic Valve Implantation for the Treatment of Severe Symptomatic Aortic Stenosis in Patients at Very High or Prohibitive Surgical Risk: Acute and Late Outcomes of the Multicenter Canadian Experience. *J Am Coll Cardiol*. 2010;55(11):1080-1090. doi:10.1016/j.jacc.2009.12.014.
3. Holmes, D., Brennan, J., Rumsfeld, J., Dai, D., O'Brien, S., Vemulapalli, S., . . . Mack, M. (2015). Clinical Outcomes at 1 Year Following Transcatheter Aortic Valve Replacement. *JAMA*, 313(10), 1019-1026.
4. Singer, M.D., R. (2015, May 3). Trans-Catheter Aortic Valve Replacement (TAVR) Surgery, Retrieved July 16, 2015.

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