

## Outcomes of Thoracic Endovascular Aortic Repair (TEVAR) in Cases of Traumatic Aortic Injury.

Theodore Tucker

Rachel Wills

James K. Wu MD

Lehigh Valley Health Network, [james.wu@lvhn.org](mailto:james.wu@lvhn.org)

Follow this and additional works at: <https://scholarlyworks.lvhn.org/research-scholars-posters>

**Let us know how access to this document benefits you**

---

### Published In/Presented At

Tucker, T., Wills, R., Wu, J., (2017, July, 31) *Outcomes of Thoracic Endovascular Aortic Repair (TEVAR) in Cases of Traumatic Aortic Injury*. Poster presented at LVHN Research Scholar Program Poster Session, Lehigh Valley Health Network, Allentown, PA.

This Poster is brought to you for free and open access by LVHN Scholarly Works. It has been accepted for inclusion in LVHN Scholarly Works by an authorized administrator. For more information, please contact [LibraryServices@lvhn.org](mailto:LibraryServices@lvhn.org).



# Outcomes of Thoracic Endovascular Aortic Repair (TEVAR) in Cases of Traumatic Aortic Injury

Theodore Tucker, Rachel Wills, Dr. James Wu M.D.

Lehigh Valley Health Network, Allentown, Pennsylvania

## BACKGROUND

- Traumatic Aortic Injury (TAI) typically the result of motor vehicle accident (MVA) induced chest trauma<sup>2</sup>
- Until recently, standard method of treatment was open surgical repair<sup>3</sup>
  - Highly invasive<sup>1</sup>
  - High rates of mortality and morbidity<sup>1</sup>
- Endovascular treatment has now become the preferred method of treatment<sup>3</sup>
  - Less invasive<sup>1</sup>
  - Lower rate of mortality & morbidity<sup>1</sup>
  - More complications with stent grafts<sup>1</sup>
- The purpose of this study is to review the outcomes of TAI patients who proceeded with Thoracic Endovascular Aortic Repair (TEVAR) as their treatment

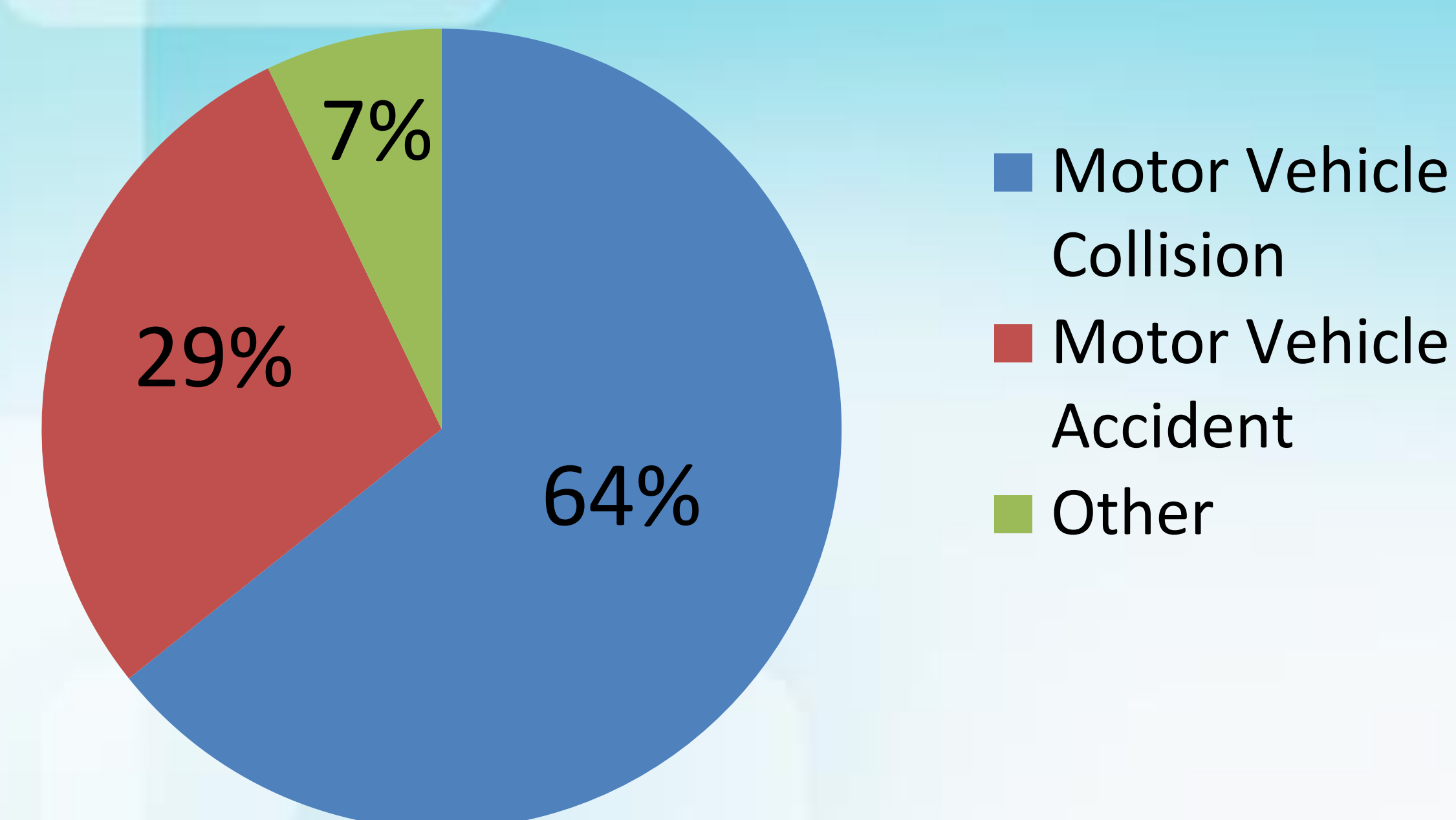
## METHODS

- A total of 90 patients have undergone TEVAR at LVHN since 2006, however this study focuses on only 14 TAI patients between 2011 and 2017
- Through EPIC, pre-operative data was reviewed to determine:
  - Injuries suffered
  - Cause of injuries
- Post-operative data was reviewed to determine:
  - Status of implanted stent graft
  - Patients overall recovery from injuries

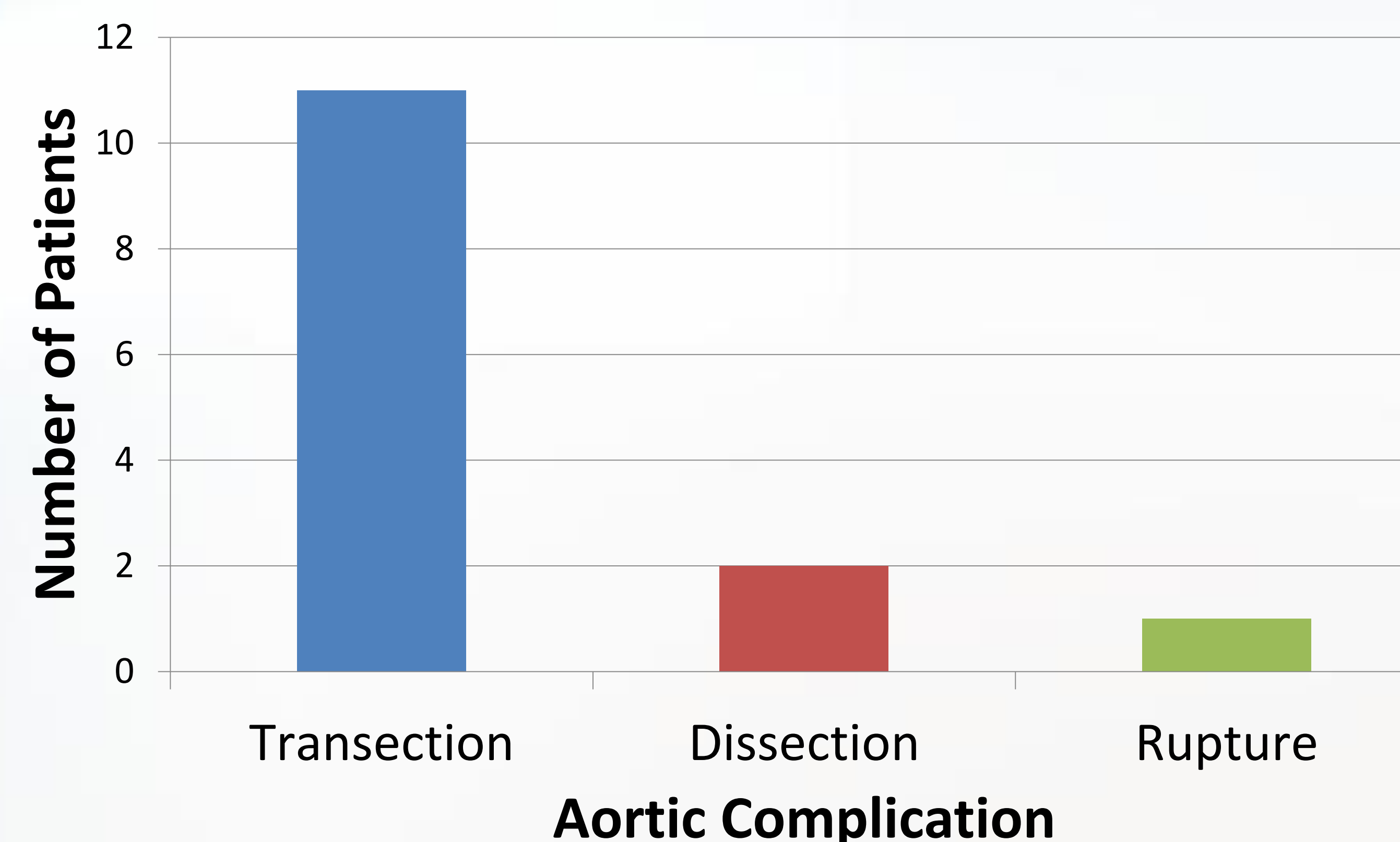
## OUTCOMES

Total Number of Patients	n=14
Patient Age	Avg. = 40 Range = (17-74)
Patient Gender	Male = 11 Female=3

Causes for Traumatic Aortic Injury at LVHN



Traumatic Aortic Injury Classification



## RESULTS

- All 14 patients survived the initial procedure
- 13 patients were involved in MVA's
- 11 Transections, 2 Dissections, 1 Rupture
- No TEVAR related complications or deaths as of July 2017
- Large portion of patients do not follow up or stop coming to CT surgery for a variety of reasons, which makes post-operative monitoring difficult

## CONCLUSIONS

The six years of data suggests that TEVAR is an effective method of treatment for patients admitted with TAI. Due to the majority of these patients being much younger and not traditional candidates for the procedure, the long term outcome is unknown. The remaining 13 patients should then be monitored as best they can to collect more data on the long term effects of this procedure on otherwise healthy individuals.

### References

1. Azizzadeh, A., Keyhani, K., Miller, C. C., Coogan, S. M., Safi, H. J., & Estrera, A. L. (2009). *Blunt traumatic aortic injury: Initial experience with endovascular repair*
2. Gupta, N., Matta, E. J., & Oldham, S. A. A. (2015). *Cardiothoracic imaging. Introduction to diagnostic radiology* (). New York, NY: McGraw-Hill Education.
3. Jonker, F. H. W., Giacomelli, J. K., Muhs, B. E., Sosa, J. A., & Indes, J. E. (2010). *Trends and outcomes of endovascular and open treatment for traumatic thoracic aortic injury*
4. LeMaire, S. A., Gopaladas, R. R., & Coselli, J. S. (2014). *Thoracic aneurysms and aortic dissection. Schwartz's principles of surgery* (10th ed., ). New York, NY: McGraw-Hill education.
5. Mamkin, I., & Heitner, J. F. (2011). Chapter 22. diseases of the aorta. *Multimodal cardiovascular imaging: Principles and clinical applications* (). New York, NY: The McGraw-Hill Companies.

© 2017 Lehigh Valley Health Network

610-402-CARE LVHN.org