

12-MONTH MORTALITY AND HEALTHCARE UTILIZATION IN A REAL-WORLD PATIENT POPULATION WITH SEVERE TRICUSPID REGURGITATION

EE220

Colin Barker, MD¹; Matthew Reynolds, MD²; Lisa S Kemp, PhD³; Michael Ryan, MS⁴; Candace Gunnarsson, PhD⁵; William Irish, PhD⁶; Sarah Mollenkopf, MPH ³; David Cohen, MD ^{7,8}

1 Division of Cardiovascular Medicine, Department of Medicine, Vanderbilt University Medical Center, Nashville, TN, 2 Baim Institute for Clinical Research, Boston, MA, 3 Edwards Lifesciences, Irvine, CA, 4 MPR Consulting, Cincinnati, OH, 5 Gunnarsson Consulting, Jupiter, FL, 6 Department of Surgery, East Carolina University, Greenville, NC, 7 Cardiovascular Research Foundation, New York, NY, 8 St Francis Hospital and Heart Center, Roslyn, NY

OBJECTIVE

- As new therapies, such as transcatheter valve repair and replacement become available for patients suffering from severe tricuspid regurgitation (STR), it is increasingly important to understand the current economic burden of patients with STR
- To examine the healthcare burden of commercially insured patients, 12 months following onset of STR

METHODS

- Data were obtained from the Optum® Integrated Database [Electronic health records (EHR) and Claims] from 2016-2022Q1.

INCLUSION CRITERIA

- age ≥ 18
- a ICD-10 diagnosis of tricuspid regurgitation
- physician notes in the EHR that tricuspid regurgitation was severe
- a record of an echocardiogram within 30 days

Following physician note, patients had either a heart failure hospitalization or at least three of the following signs or symptoms:

- kidney or liver disfunction, right ventricular dysfunction, weight loss, extreme fatigue, insomnia, ascites, severe edema, or elevated jugular veins

Time zero is the date of heart failure hospitalization or the first date of the third sign or symptom.

- Patients had to have 6 months of continuous claims and prescription coverage prior to time zero

EXCLUSION CRITERIA

- Prior tricuspid valve intervention
- end stage renal disease
- severe mitral regurgitation
- A record of cardiac surgery 3 months prior to time zero

Figure 1: Kaplan Meier Curve – Survival 12 Months Post Severe TR Diagnosis

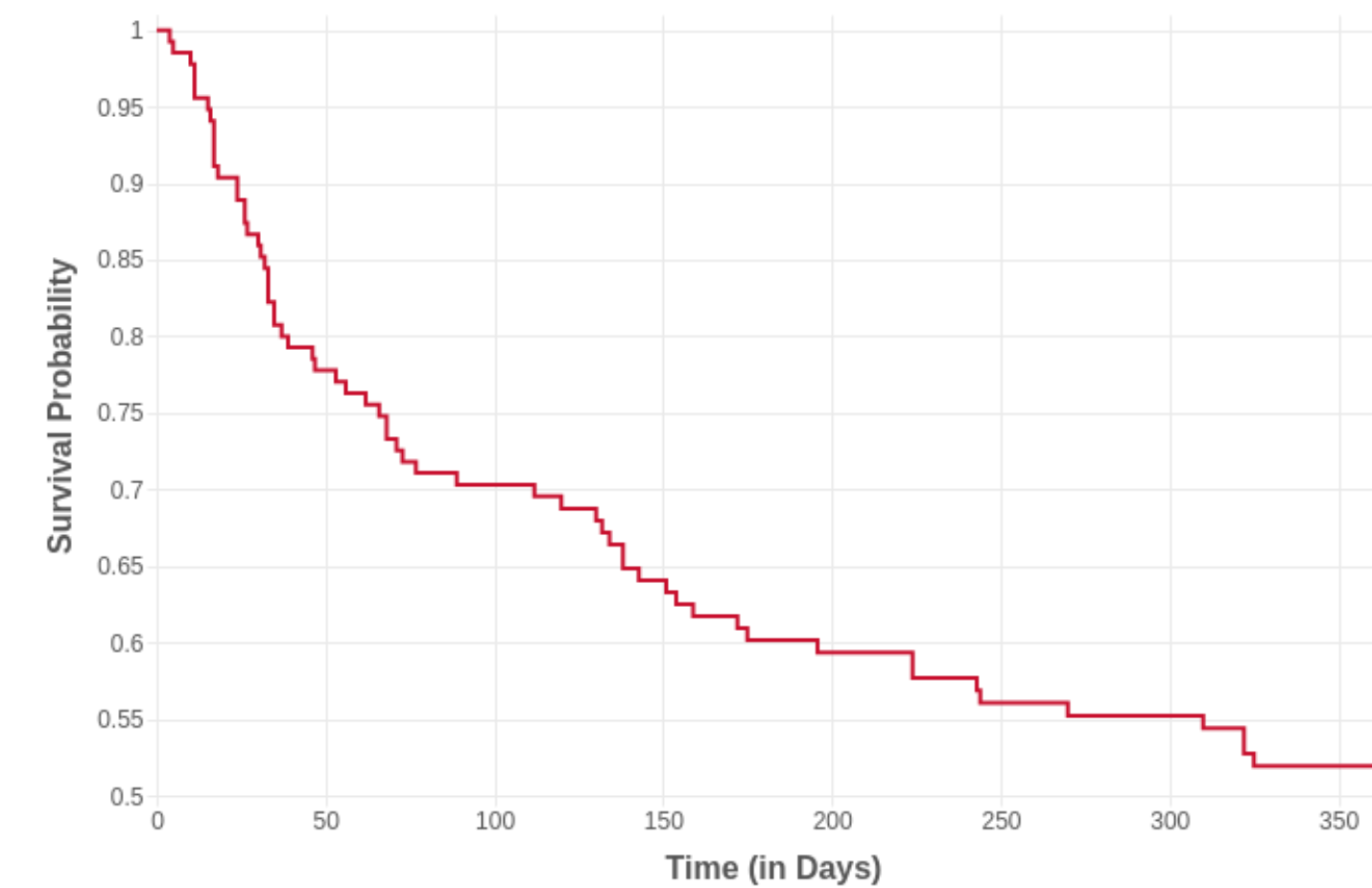


Table 1: Annualized Healthcare Utilization and Expenditures (N=136)

Outcome measure	Parameter	Outcome value
All-cause Mortality		
	6 Months	53 (40%)
	12 Months	63 (48%)
Annualized All-Cause Hospitalizations		
	Mean (SD)	2.64 (5.46)
	Median (IQR)	0.86 (0-2.79)
Annualized Hospital Days		
	Mean (SD)	15.95 (27.90)
	Median (IQR)	3.50 (0-16.37)
Annualized Outpatient Hospital Visits		
	Mean (SD)	8.94 (13.08)
	Median (IQR)	3.45 (0-12.02)
Annualized ER Visits		
	Mean (SD)	1.13 (3.38)
	Median (IQR)	0 (0-0.95)
Annualized Office/Clinic Visits		
	Mean (SD)	13.36 (14.40)
	Median (IQR)	9.76 (1.59-21.31)
Annualized Total Costs		
	Mean (SD)	\$95,692 (\$110,866)
	Median (IQR)	\$61,782 (\$15,539-\$135,525)

RESULTS

The study cohort consisted of 136 patients with recent onset STR.

- mean age was 77 years
- 65% were female
- mean Elixhauser comorbidity index was 7.6
- Annualized average (SD) all cause hospitalizations and hospital days were as follows: 2.64 (5.46) and 15.95 (27.90)
- Annualized emergency department, outpatient and office visits were 1.13 (3.38), 8.94 (13.08). and 13.36 (14.40) respectively
- Annualized costs in the 12 months following STR onset were \$95,692 (\$110,866)

LIMITATIONS

- Patients with tricuspid regurgitation that did not have severity information in their EHR were not captured in this analysis. There is some evidence that sicker patients have a more complete EHR⁹
- The Optum Integrated Database represents patients with commercial health insurance coverage. Outcomes may look different in a Medicare population
- Due to the small sample size, outcomes may be less representative of a larger patient population

CONCLUSIONS

Severe tricuspid regurgitation is associated with:

- a high rate of mortality
- substantial resource utilization
- high healthcare-related costs

If proven effective, new treatment options for STR have the potential to lower these costs substantially

9 Weiskopf NG, Rusanov A, Weng C. Sick patients have more data: the non-random completeness of electronic health records. InAMIA Annual Symposium Proceedings 2013 (Vol. 2013, p. 1472). American Medical Informatics Association

