

Identifying Early Disease Progression in Tricuspid Regurgitation when Echocardiographic Imaging Data is Unavailable

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OBJECTIVE

- Tricuspid Regurgitation (TR) is a form of valvular heart disease that contributes to high healthcare utilization and can lead to death.
- Identification of TR disease progression in real-world data sources could help physicians determine candidates for advanced therapies and improve care management.
- This study applies a disease severity proxy definition from a linked claims and electronic health record (EHR) dataset and tests whether it can identify disease progression differences for TR.

METHODS

- Data were obtained from the Optum® Market Clarity [Electronic health records (EHR) and Claims] from 2016-2022Q4.

INCLUSION CRITERIA

- age ≥ 50
- an ICD-10 diagnosis of tricuspid regurgitation
- an echocardiogram within 1 year prior to 6 months after TR diagnosis

Time zero is the date of the first TR claim in the database

- Patients had to have 12 months of continuous claims and prescription coverage prior to time zero

EXCLUSION CRITERIA

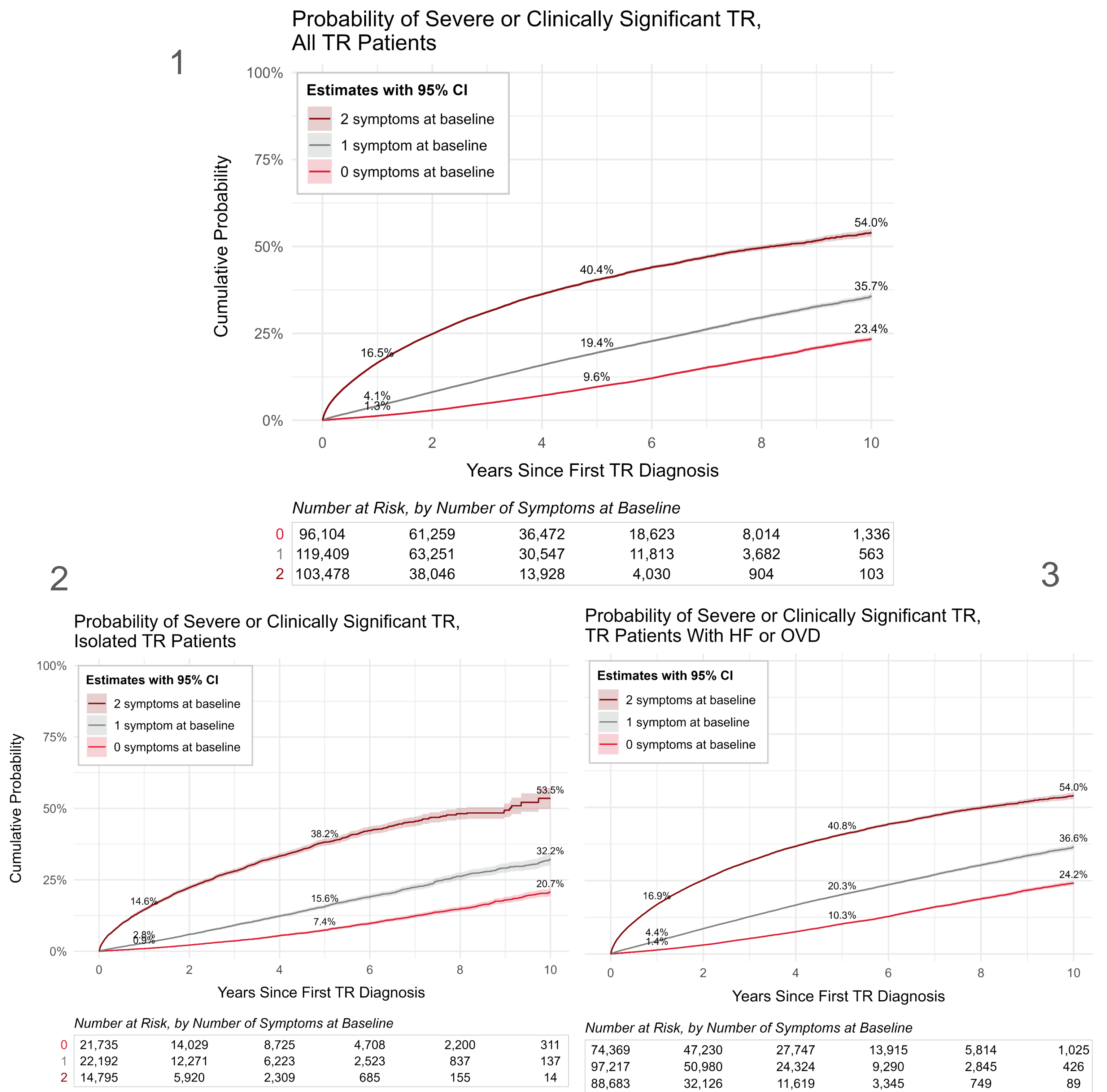
- Patient TR disease was severe, massive or torrential at time zero
- A record of heart failure hospitalization in the year prior to time zero
- A three symptom burden out of a seven-symptom list at time zero

Patients were separated into 3 cohorts based on whether they had 0, 1 or 2 of the following signs or symptoms at time zero:

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

Cumulative Incidence Functions (CIFs) which included competing risks (death) were estimated to measure when patients reached a severe TR status

Figures 1-3: CIF Curves – Time to Severe TR status by symptom burden at database entry for (1) all TR patients, (2) TR patients w/o Heart Failure (HF) or Other Valve Disease (OVD) and (3) TR patients w/ HF or OVD



RESULTS

Measure	Statistic	Value
Total Sample	N	321,788
Age	Mean(SD)	68.97 (10)
Female	N(%)	174,919 (54.36%)
Elixhauser Score	Mean(SD)	8.32 (3.90)
Frailty Score (HFRS)	Mean(SD)	11.39 (11.10)
Chronic Kidney Disease	N(%)	148,399 (46.12%)
Stroke TIA at Baseline	N(%)	77,794 (24.18%)
Obesity	N(%)	120,977 (37.60%)
Hypertension	N(%)	289,369 (89.93%)
Prior GI Bleed at Baseline	N(%)	71,416 (22.19%)
Diabetes	N(%)	133,927 (41.62%)
Pulmonary Hypertension	N(%)	49,694 (15.44%)
Chronic Obstructive Pulmonary Disease	N(%)	93,867 (29.17%)

LIMITATIONS

- The Optum® Market Clarity database represents patients with commercial health insurance coverage and some third-party data which may include Medicare Fee-for-Service (FFS). Outcomes may look different in a population with more FFS patients.
- This analysis only includes data that is either billed to patient insurance or available in the patient EHR during the study period.
- It is unknown how long patients experienced TR disease or symptoms before their first TR claim in the database. This duration may affect severity progression.

CONCLUSIONS

- This proxy definition for severe TR was able to differentiate TR disease progression rates.
- After considering competing risk of death, disease progression looks similar across symptom cohorts regardless of presence of Heart Failure or Other Valve Disease with TR.

