



Characteristics and Outcomes of Patients with Clinically Significant Valvular Heart Disease and Cardiogenic Shock Admitted to Cardiac Intensive Care Units

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BACKGROUND

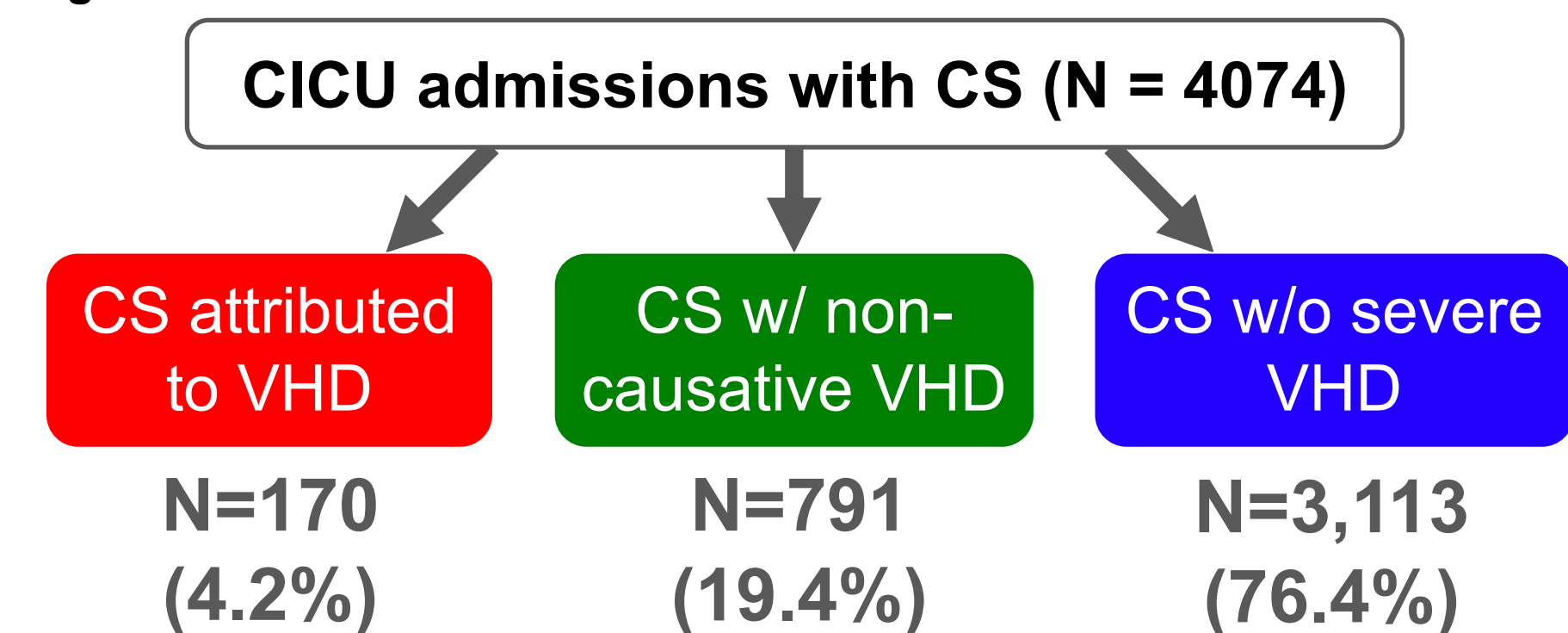
- Cardiogenic shock (CS) is a common cause for admission to the cardiac intensive care unit (CICU)
- Severe valvular heart disease (VHD) complicates CS treatment & may impact outcomes
- We sought to describe patients with CS admitted to CICUs stratified by presence of severe VHD

METHODS

- The Critical Care Cardiology Trials Network (CCCTN) is an investigator-initiated multicenter network of tertiary CICUs in the US & Canada
- Participating centers (n=42) contributed data from consecutive admissions during 2-month annual snapshots between 2017 and 2022
- We classified patients as having:
 - 1) CS attributed to VHD ("severe VHD" selected as cause of CS),
 - 2) CS w/ non-causative VHD (hx of severe VHD but severe VHD not selected as cause of CS), or
 - 3) CS w/o severe VHD (no current or historical severe VHD)

RESULTS

Figure 1



RESULTS (cont.)

Table 1

Characteristics			
	CS attributed to VHD (N=170)	CS w/ non-causative VHD (N=791)	CS w/o severe VHD (N=3113)
Demographics			
Age in yrs (25 th ,75 th)	71 (62,78)	67 (57,75)	64 (54,73)
Female	44.1	37.2	30.5
White	67.1	63.2	57.3
BMI in kg/m2 (25 th ,75 th)	28 (23,33)	27 (23,31)	28 (24,32)
Comorbidities			
Diabetes	32.9	35.1	38.9
CAD	36.5	42.2	36.6
Cerebrovascular disease	10.6	10.6	8.1
PAD	14.1	11.1	8.5
AF	44.1	46.1	25.6
Ventricular arrhythmia	4.7	13.1	8.5
Heart Failure*	47.6	73.2	52.1
Reduced EF (<50%)	50.0	82.5	87.7
Preserved EF (>50%)	48.8	16.1	10.0
CKD	32.9	38.1	26.5
Admission Parameters			
LVEF at presentation*			
<40%	27.6	74.0	78.8
≥40	64.7	23.8	15.3
Cardiac arrest prior to CICU	10.6	11.4	24.5
Highest SOFA within 1 st 24h (25 th ,75 th)	7.5 (5,11)	7 (5,10)	7 (4,10)
Highest lactate within 1 st 24h (25 th ,75 th)	3.1 (1.9,6.6)	2.8 (1.7,5.3)	3.4 (2,6.8)

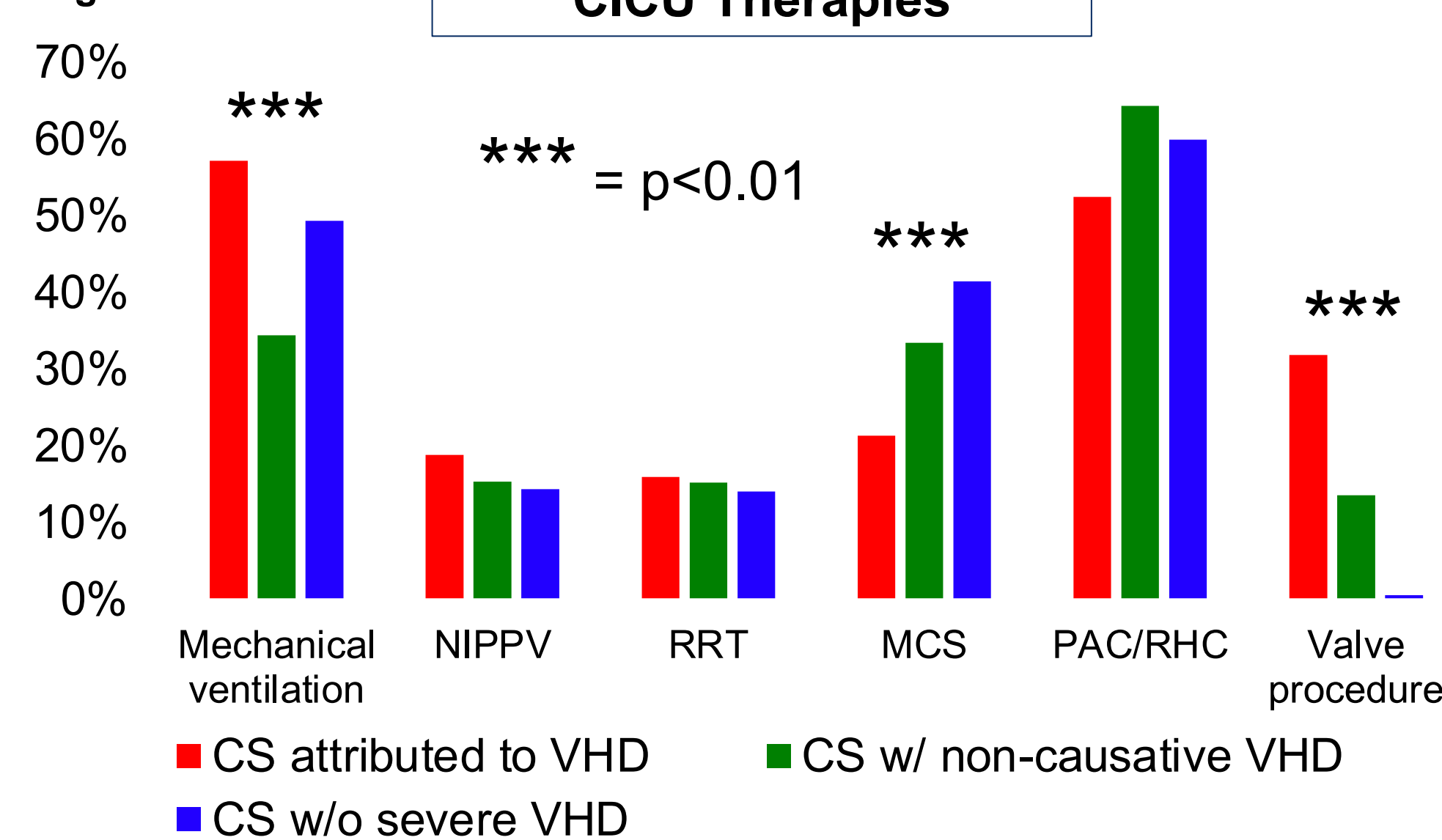
Data presented as % unless otherwise stated; * = among those with reported data

- Patients with CS attributed to VHD were older and more commonly female and white than other groups
- Patients with CS attributed to VHD more commonly had preserved LVEF (historical and at admission) and less commonly had cardiac arrest prior to CICU admission

DISCLOSURES: None

RESULTS (cont.)

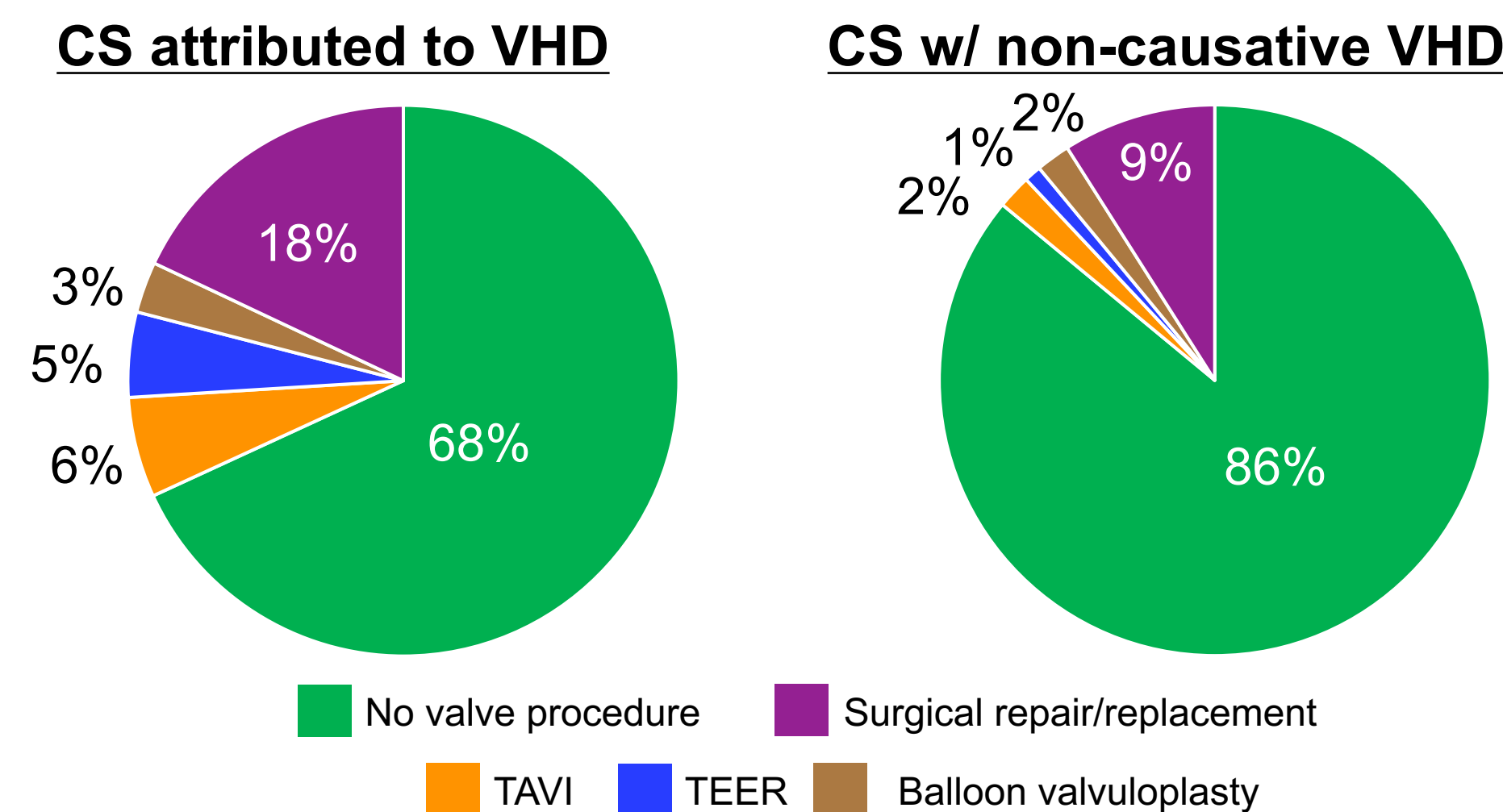
Figure 2



Valve Procedures in Admissions with Severe VHD

- 161 valve procedures were performed in 961 admissions
 - 54/170 [31.8%] in the "attributed to VHD" group
 - 107/791 [13.5%] in the "non-causative VHD" group
- Surgical repair/replacement & TAVI were most common

Figure 3

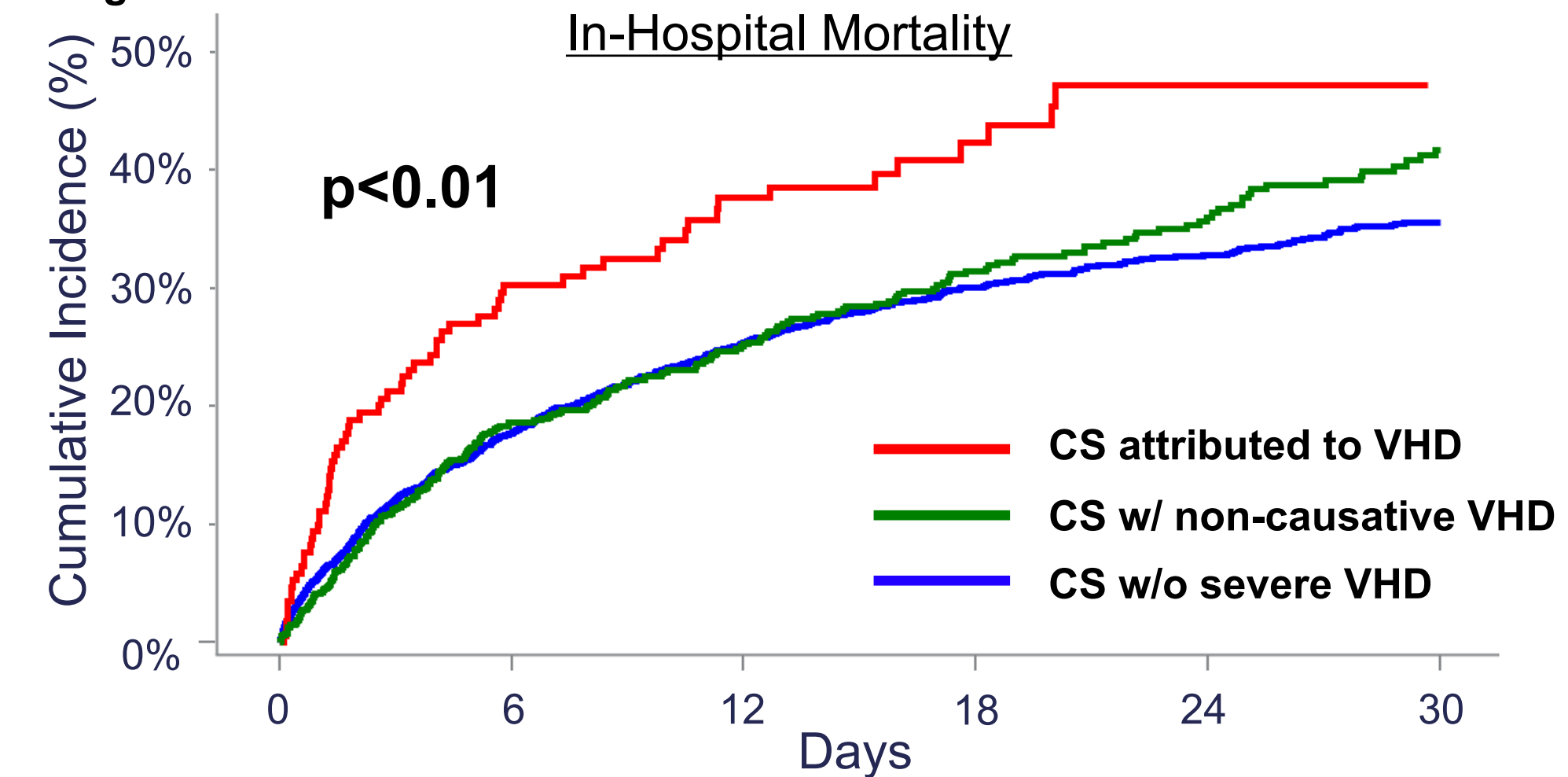


RESULTS (cont.)

In-Hospital Mortality

- Patients with CS attributed to VHD had the highest crude risk of in-hospital mortality (39.4%)
- After adjustment for age and sex, there was no significant difference in mortality between groups (aOR 1.27; 95% CI 0.92-1.76, p=0.15 for CS caused by VHD vs CS without VHD)

Figure 4



CONCLUSIONS

- VHD is the underlying cause in a minority of CICU patients with CS, though this group is a high-risk subset with in-hospital mortality approaching 50% at 30 days
- Patients with CS attributed to VHD tend to be older and more commonly have normal LV function at admission
- MCS is less commonly used in patients with CS attributed to VHD than in other groups
- Transcatheter/surgical valve procedures were performed in ~17% of CICU those w/ CS and severe VHD
- These data are limited by a lack of information describing distribution of specific valve lesions