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Takotsubo'sCardiomyopathy: Clinical Characteristics and Outcomes in the Rural State of Maine

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Pre-existing psychiatric diagnosis linked to developing Takotsubo's Cardiomyopathy.

Patients from rural areas less likely to be on psychiatric medications and had higher Takotsubo's recurrence rate.

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Introduction

- Takotsubo's Cardiomyopathy first described in Japan in 1900 → name came from the appearance of the left ventricle that looked like an octopus trap
- Presentation mimics acute coronary syndrome:
    - Chest pain, EKG changes, elevated cardiac biomarkers
- Prior studies focused on characteristics of these patients
    - Higher rate of neurological and psychiatric conditions
    - More likely to have hypothyroidism, depression, hypertension
- Rate of recurrence: 4%
- Our study aims:
    - Determine characteristics of patients diagnosed with Takotsubo's Cardiomyopathy treated at Maine Medical Center (MMC)
    - Examine treatment course and follow-up
    - Examine if differences based on rurality
- Rural definition
    - RUCA (rural – urban community area) cods
    - Census data to classify areas divided by zip code based on:
        - Population density, measures of urbanization and daily commuting

Methods

- Retrospective chart review
- Epic search for patients with Takotsubo's Cardiomyopathy or stress cardiomyopathy
- Dates: 12/1/2012 – 1/31/2020
- Age ≥ 18 years old
- Received care through MMC with documentation through Epic electronic medical record

Results

- 192 patients included (see Table 1)
- No seasonal difference
- 60% of patients had inciting event identified
    - 67% with medical stress vs 20% emotional stress
- When divided by rurality
    - 49% non-rural vs. 36% rural on psychiatric medications
    - 3% non-rural vs 14% rural recurrence rate

Discussion

- As seen in prior studies:
    - Higher burden of pre-existing psychiatric disease

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Results

Table 1: Patient characteristics

Characteristic	Measurement; n (%) or mean ± standard deviation
Female sex — no./total no. (%)	170/ 192 (88.5)
Age — years	67.0 ± 12.3
Race — no./total no. (%)	
White	187/188 (99.5)
Other	1/188 (0.5)
Rural residence — no./total no. (%)	70/189 (37.0)
Maine	**63/127 (49.6)**
Non-Maine residence	7/62 (11.3)
Comorbidities — no./total no. (%)	
Cardiomyopathy	4/192 (4.2)
Coronary artery disease (CAD)	24/192 (12.5)
Hypertension	113/192 (58.9)
Hyperlipidemia	97/192 (50.5)
Atrial fibrillation/flutter	16/192 (8.3)
Clinical heart failure	12/192 (6.3)
Hypothyroidism	**46/187 (24.6)**
Diabetes	33/188 (17.6)
Chronic kidney disease	9/187 (4.8)
Metabolic syndrome	8/188 (4.3)
Anxiety/depression/PTSD	**92/188 (48.9)**

Table 2: Clinical Course

Hospital Course/Treatment	Measurement: no./total no. (%)
STEMI Activation	48/185 (25.9)
ICU Case	88/187 (47.1)
Pressor/Inotrope/MCS	18/187 (9.6)
Results of Cardiac Cath (n=151)	
No CAD	43/151 (28.5)
Non-obstructive CAD	104/151 (68.9)
Single vessel CAD	1/151 (0.7)
Multi vessel CAD	3/151 (2)
Other (n=38)	
Nuclear Stress Test	13/38 (9.4)
None	25/38 (90.6)

Table 3: Outcomes

Post-hospitalization Outcomes	Measurement: no./total no. (%)
Improvement in LVEF in follow-up — no./total no. (%) (after 3 months)	**149/178 (83.7)**
Yes	4/178 (2.2)
No	14/178 (7.9)
Unknown	11/178 (6.2)
N/A	
Recurrent presentation with TCM — no./total no. (%)	16/170 (9.4)

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