

## .004. Takotsubo Cardiomyopathy in Chronic Kidney Disease patients: A systematic review

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### Purpose

Chronic kidney disease (CKD) is associated with worse cardiovascular outcomes. CKS is a state of sympathetic hyperactivity. Sympathetic hyperactivity is known to play a key role in pathogenesis of takotsubo cardiomyopathy (TCM). Under physiological or psychological stress CKD patients thus are at increased risk of TCM. Multiple isolated case reports of TCM associated with CKD have been reported. Here we undertaken the rst systematic review of cases of TCM in CKD patients.

### Methods

A literature search of various databases was conducted using the key words “stress cardiomyopathy, TCM, CKD, end stage renal disease (ESRD) ” to identify cases of TCM related to CKD and ESRD. Cited references of the case reports were also reviewed to identify additional cases. Demographic data, electrocardiography (ECG), echocardiography (Echo) and angiography findings were analyzed when available.

### Results

A total of 30 cases were identified. The mean age at presentation was  $63.85 \pm 12.84$  yrs (Median 63 yrs). 86.67% of the cases were reported in females and 13.33% in males. Dyspnea (60%) was most presenting complaint, followed by chest pain (36.67%), fatigue (10%), lower limb edema (3.33%) , seizures (3.33%) and confusion (3.33%). Hypertension was prevalent in 53.33% of cases, diabetes in 40%, atrial fibrillation in 16.67%, hyperlipidemia in 10%, smoking in 3.33%, history of coronary artery disease in 3.33%, history of TCM in 3.33% and asthma in 3.33%. 60% of the patients were noted to have ESRD. 16 cases reported number of years on hemodialysis (HD). Mean years on HD was  $3.39 \pm 3.2$  yrs (median 3 yrs). 23 cases (73.67%) another stressor that possibly led to TCM. Heart rate was reported in 16 cases, mean heart rate was  $89.65 \pm 25.81$ . Systolic and diastolic blood pressures were reported in 13 cases, mean being  $124.31 \pm 37.99$  and  $74.23 \pm 22.61$  respectively. ECG findings were reported in all 30 cases with ST-segment elevation in 50%, T wave inversion in 50%, Q waves in 10%, ST-segment depression in 6.67%, atrial fibrillation in 6.67%, QTc prolongation 6.67%, left anterior fascicular block in 6.67%, right bundle branch block (BBB) in 6.67%, new onset left BBB in 3.33%, sinus tachycardia in 3.33%, sinus bradycardia in 3.33% and nonspecific ST-T changes in 3.33%. Troponin levels were reported in 28 of whom 92.86% of cases had elevated levels. All 30 cases reported echo findings 100% had wall motion abnormalities, reduced ejection fraction (EF) was reported in 50% and apical ballooning with wall motion abnormality in 56.67%. Coronary angiography was reported in 20 cases of which 85 % had normal coronaries, non-obstructive CAD was noted in 10% and CAD in 5%. Death was not reported in any case.

**Conclusions**

TCM in CKD/ESRD patients happen in elderly women, majority of whom had ESRD in the setting of an additional stressor. CKD/ESRD patients are at elevated risk for development of TCM. Further studies are required to understand the risk of TCM in CKD patients.