**Echocardiographic finding of Takotsubo cardiomyopathy in patients with Subarachnoid Haemorrhage: A one-year experience**.

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**Introduction**

Neurogenic stress cardiomyopathy (NSC) has been well described in medical literature. Takotsubo cardiomyopathy (TCM) is a special form of NSC found in patients with subarachnoid haemorrhage [1]. The aim of our audit was to determine the prevalence of TCM and NSC in our patient population.

**Methodology:**

Following audit department approval, we identified patients admitted with subarachnoid haemorrhage (SAH) from April 2012-2013 to our tertiary neurosurgical centre (Royal Preston Hospital). Patients who underwent echocardiographic examination were identified. NSC/TCM was defined using ‘modified Mayo criteria’ based on findings of: (1) apical, mid segment hypokinesia with maintained basal contractility (2) absence of significant coronary disease (>50% narrowing) (3) ECG abnormality (4) absence of pheochromocytoma/myocarditis. [1]

**Results:**

Out of 230 patients admitted with a SAH, 12 patients had an echocardiography examination. Median age was 53 (IQR 46-68). 7 (58%) were female. Echocardiograms were normal in 7 (58%) patients, 1 patient had aortic valve endocarditis. 3 (25%) patients had echocardiographic findings consistent with TCM/NSC. (See table 1). All patients required ICU admission.

**Table 1: Characteristics of patients with NSC/TCM.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Age/sex/  *Hunter -Hess Grade* | Alive/dead | Trop. I/  *ECG changes* | h/o  IHD | Echo findings |
| 1 | 53  Female  *Grade IV* | Died | 348  *Yes* | No | Dilated akinetic mid & apical segments. basal hypokinesia  EF <25%. |
| 2 | 32  Male  *Grade I* | Alive | No rise  *Yes* | No | Good basal contraction. akinetic mid & apical segments  EF <25%.LV grossly dilated |
| 3 | 60  Male  *Grade 1* | Alive | No rise  *Yes* | No | Good basal contraction. akinetic mid & apical segments  EF <25% |

Neurogenic pulmonary oedema developed in one patient (no 3) and developed evidence of cardiogenic shock requiring ionotropic support.

**Discussion:**

Patients described were at low risk of coronary artery disease, & clinical presentation did not fit with ischaemia, myocarditis or pheochromocytoma. Incidence of TCM/NSC in our cohort was 1.3%. This finding is consistent with other published case series in literature. [1]. However since all patients with SAH do not undergo echocardiographic examination, this is likely to be under diagnosed and reported. We recommend routine screening and follow up of patients with SAH for this condition

**Reference:**

1.Banki et al. Prospective analysis of prevalence, distribution, and rate of recovery of left ventricular systolic dysfunction in patients with subarachnoid hemorrhage. Journal of Neurosurgery. July 2006/ Vol 105/1/15-20