Therapeutic Outcomes for Patients With Aneurysmal Subarachnoid Hemorrhage Complicated by Takotsubo Cardiomyopathy

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Introduction

There are no guidelines regarding the optimal treatment of subarachnoid hemorrhage (SAH) patients complicated by Takotsubo cardiomyopathy (TCM). Although endovascular coiling has been favored as the first-line treatment, clipping may also be indicated in patients with ruptured middle cerebral artery aneurysms or in those with massive intracerebral hemorrhage. The study objective is (1) to report the feasibility/safety of clipping/coiling and (2) to identify possible prognosticators in that population.

Methods

Between January 2008 and December 2014, 371 consecutive patients with aneurysmal SAH underwent transthoracic echocardiography after admission, and 30 with TCM (7.7%) were identified. We reviewed the incidence and type of perioperative complications among clipped (n=11) and coiled (n=19) patients. The 30 patients were dichotomized based on their 90-day modified Rankin scale (mRS) scores into favorable (mRS: 0-2) and unfavorable (mRS: 3-6) groups, and their demographic, laboratory and echocardiographic variables were compared.

Results

Neither clipped nor coiled patients developed serious perioperative cardiopulmonary complications, but coiled patients had a higher incidence of fatal procedure-related complications. Among the 30 patients, 13 (43%) had favorable 90-day outcomes, and the favorable group was significantly younger. Age, but not the degree of cardiac dysfunction, correlated with outcomes by multivariate regression analysis.

Conclusions

The lack of correlation between the degree of cardiac dysfunction and outcomes indicates that aggressive intervention is justified even in patients with severely impaired cardiac function. In addition to coiling, clipping is a viable treatment modality in suitable cases, and treatment selection can be made on a case-by-case basis in patients with TCM.

Learning Objectives

The objectives of this study were as follows: (1) to evaluate the feasibility and safety of clipping and coiling performed acutely in SAH patients with TCM; and (2) to document the therapeutic outcomes and identify possible prognostic factors in that population.

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