

Dual Anti-Platelet Therapy is Associated with Reduced Risk of Clinical Vasospasm and Delayed Cerebral Ischemia in Aneurysmal Subarachnoid Hemorrhage

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Introduction

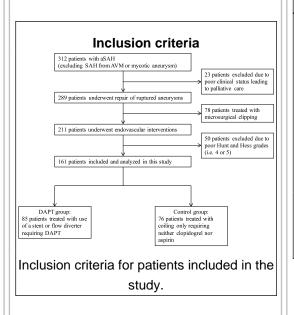
Clinical vasospasm and delayed cerebral ischemia (DCI) are devastating complications of aneurysmal subarachnoid hemorrhage (aSAH). Several theories have been postulated as potential etiologies of clinical vasospasm and DCI, involving platelet activation. However, the effects of dual anti-platelet therapy (DAPT: aspirin and clopidogrel) on clinical vasospasm and DCI have not been previously investigated. The objective of this study was to evaluate the effects of DAPT on clinical vasospasm and DCI in aSAH patients.

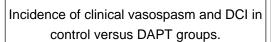
Methods

Analysis of patients treated for aSAH during the period from July 2009 to April 2014 was performed in a single-institution retrospective study. Patients were divided into two groups: patients who underwent stent-assisted coiling or placement of flow diverters requiring DAPT (DAPT group) and patients who underwent coiling only without DAPT (control group). The frequency of symptomatic clinical vasospasm and DCI and of hemorrhagic complications was compared between the two groups, utilizing univariate and multivariate logistic regression.

Results

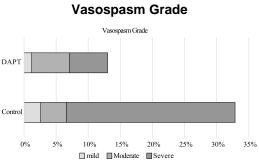
Of 312 aSAH patients considered for this study, 161 patients met the inclusion and exclusion criteria and were included in the analysis (85 patients in the DAPT group and 76 patients in the control group). The risks of clinical vasospasm (OR: 0.244; CI 95% [0.097 - 0.615]; p = 0.003) and DCI (OR: 0.056; CI 95% [0.01 -0.318]; p = 0.001) were significantly lower in patients receiving DAPT. Hemorrhagic complications associated with placement of external ventricular drains and ventriculoperitoneal shunts were similar in both groups (4% versus 2%; p = 0.9).



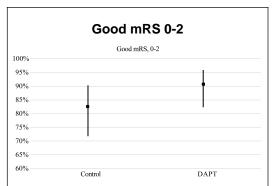


Clinical Outcome mRS Clinical Outcome , Modified Rankin Score DAPT Control 0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

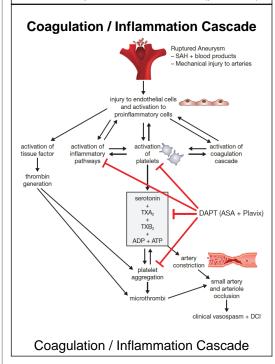
Clinical outcome assessment using mRS at 60 days post follow-up discharge in control vs DAPT group



The rate of clinical vasospasm after adjustment for the degree of angiographic vasospasm in control versus DAPT group



The DAPT group had a statistically nonsignificant trend towards better outcomes when compared to the control (p = 0.15)



Conclusions: The use of DAPT was associated with a lower risk of clinical vasospasm and DCI in patients treated for aSAH without an increased risk of hemorrhagic complications.