Seizure Prophylaxis in Aneurysmal Subarachnoid Hemorrhage: a Survey of Leading Cerebrovascular Centers

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Learning Objectives

1) Identify the controversy surrounding seizure prophylaxis following subarachnoid hemorrhage, and
2) Understand the discrepancy among leading cerebrovascular centers regarding the approach to seizures prophylaxis and surveillance.

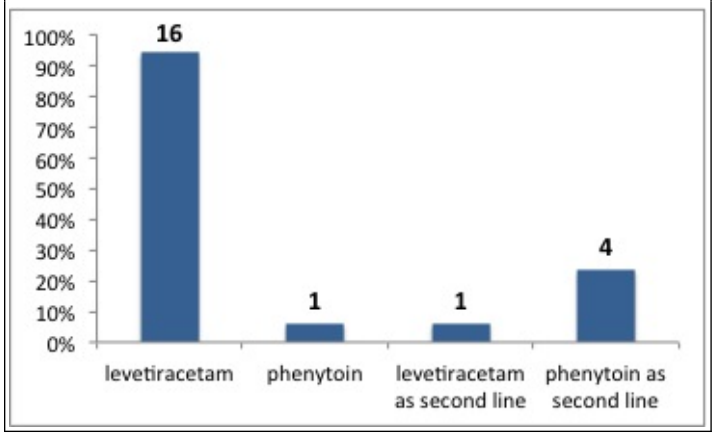
Introduction

Seizure following subarachnoid hemorrhage occurs in 6-18% of patients with a ruptured intracranial aneurysm. Not only may seizure confound the neurologic exam, but it may also place patients with an unsecured lesion at increased risk for re-rupture. Seizure prophylaxis after subarachnoid hemorrhage is controversial, and there remains no level I data regarding its safety or efficacy.

Methods

A brief 8-question survey was sent to 25 major US centers with high-volume aSAH (>100 annually). Respondents were asked about institutional practices regarding seizure prophylaxis, including preferred medications and duration of therapy, as well as seizure surveillance with EEG.

Preferred anti-seizure medication



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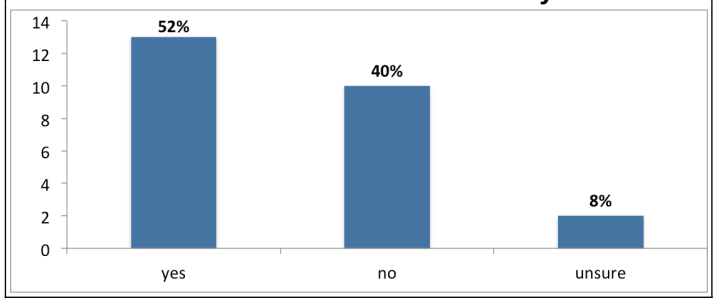
Do you believe seizure prophylaxis with an anti-seizure medication is necessary?



Results

Survey responses were received from members of all 25 institutions. Thirteen (52%) respondents endorsed the utility of seizure prophylaxis, while 10 (40%) did not, and 2 (8%) were unsure. Seventeen (68%) reported routine use of an anti-convulsant for seizure prophylaxis, while 8 (32%) did not. Four respondents (16%) did not believe prophylaxis was necessary, however administered prophylaxis in any case.

Several institutions used seizure prophylaxis on a conditional basis. For example 2 (8%) respondents only administered prophylaxis in the setting of intracerebral hemorrhage (ICH), while 2 others (8%) provided prophylaxis if either ICH was present or if the Fisher Grade was = 3.

Among respondents using prophylaxis, levetiracetam was the first-line medication for the vast majority (16/17). The duration of levetiracetam prophylaxis ranged from 1 day to 6 weeks following SAH, and averaged 13.2 days, with a median of 11 days. Most centers (65.2%) supported EEG use when the neurologic exam was unreliable or inexplicably declining.

Twenty-four (96%) respondents agreed that a trial randomizing patients to levetiracetam or no anti-seizure medication is warranted at this time, and all 25 (100%) believed that such a trial would be ethical.

References con't

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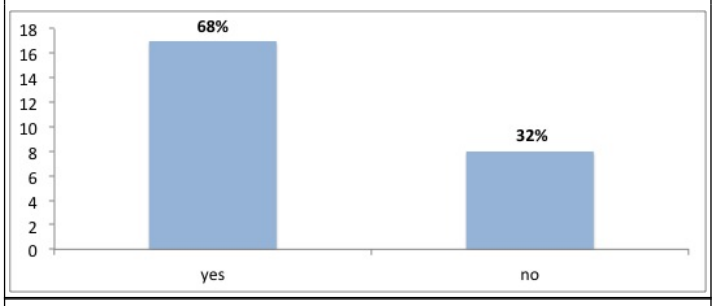
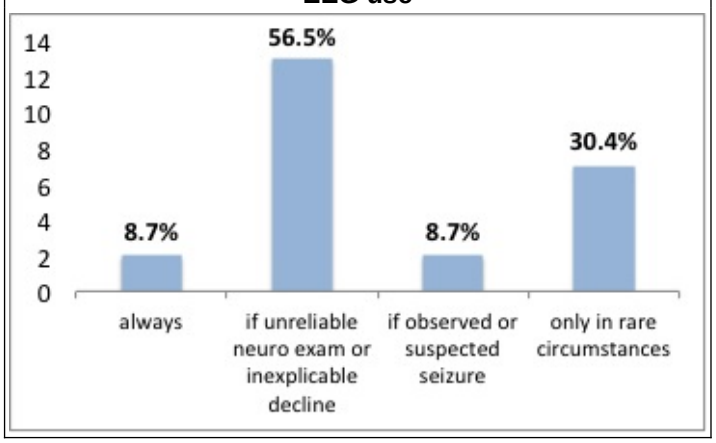
Do you provide seizure prophylaxis with an antiseizure medication?



EEG use



Conclusions

The routine use of seizure prophylaxis following aneurysmal subarachnoid hemorrhage is controversial. Among a sampling of 25 major academic centers, most administer prophylaxis, while a significant proportion does not. The majority believes a trial randomizing patients to receive seizure prophylaxis is both timely and ethical.

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