Subarachnoid hemorrhage (SAH)

Epidemiology

Subarachnoid hemorrhage (SAH) is usually caused by a ruptured intracranial aneurysm, but in some patients no source of hemorrhage can be detected.

Recent data showed increasing numbers of cases of spontaneous Spontaneous nonaneurysmal subarachnoid hemorrhage.

Accounts for only 5% of strokes, but occurs at a fairly young age.

The overall incidence of SAH is approximately 9 per 100,000 person-years. Rates are higher in Japan and Finland and increase with age. The preponderance of women starts only in the sixth decade. The decline in incidence of SAH over the past 45 years is relatively moderate compared with that for stroke in general 1).

Etiology

Intracranial aneurysms are the cause of subarachnoid haemorrhage in 85% of cases.

In some patients no source of hemorrhage can be detected.

Classification

see Subarachnoid hemorrhage classification.

Scales

Subarachnoid hemorrhage scales

Clinical features

see Subarachnoid hemorrhage clinical features.

Diagnosis

see Subarachnoid hemorrhage diagnosis.
Outcome

see Subarachnoid hemorrhage outcome.

Complications

see Aneurysmal subarachnoid hemorrhage complications.

Treatment

see Subarachnoid hemorrhage treatment.

Models

The Rabbit Blood-shunt Model for the Study of Acute and Late Sequelae of Subarachnoid Hemorrhage

Outcome

Subarachnoid hemorrhage (SAH) has a substantial impact on quality of life and future risk for mortality in patients who survive the initial injury and hospitalization. Poor neurological status and advanced age on admission have been recognized as poor clinical prognostic factors and is one of the life-threatening diseases with high morbidity and mortality rate.

A neurological disease that was disgraceful fifty years ago has lost any disquieting and embarrassing significance in the present time to the light of evolution of vascular neurosurgery.

Hospital case volume may be associated with improved outcomes after subarachnoid hemorrhage (SAH)

High SAH patient volume is robustly and strongly associated with lower inpatient mortality, fewer poor outcomes, and more discharges to home. The observed SAH patient volume association does not plateau until facilities are treating more than 100 SAH patients per year. This is a considerably higher patient volume threshold than the 20 SAH/year/facility set forth by the Joint Commission for CSC Certification.

Short-term SAH outcomes have improved. High-volume hospitals have more favorable outcomes than low-volume hospitals. This effect is substantial, even for hospitals conventionally classified as high volume.

Using the Get With The Guidelines Stroke registry, Prabhakaran et al., analyzed patients with a discharge diagnosis of SAH between April 2003 and March 2012 and assessed the association of
annual SAH case volume with in-hospital mortality by using multivariate logistic regression adjusting for relevant patient, hospital, and geographic characteristics.

Among 31,973 patients with SAH from 685 hospitals, the median annual case volume per hospital was 8.5 (25th-75th percentile, 6.7-12.9) patients. Mean in-hospital mortality was 25.7%, but was lower with increasing annual SAH volume: 29.5% in quartile 1 (range, 4-6.6), 27.0% in quartile 2 (range, 6.7-8.5), 24.1% in quartile 3 (range, 8.5-12.7), and 22.1% in quartile 4 (range, 12.9-94.5). Adjusting for patient and hospital characteristics, hospital SAH volume was independently associated with in-hospital mortality (adjusted odds ratio 0.79 for quartile 4 vs 1, 95% confidence interval, 0.67-0.92). The quartile of SAH volume also was associated with length of stay but not with discharge home or independent ambulatory status.

In a large nationwide registry, they observed that patients treated at hospitals with higher volumes of SAH patients have lower in-hospital mortality, independent of patient and hospital characteristics suggesting that experienced centers may provide more optimized care for SAH patients. 14)


