

What Admission Factors Predict Shunt Dependence in SAH Patients?

Olutomi T. Akinduro BS; Oluwaseun Akinduro MD; Nnenna Mbabuikwe MD; William D. Freeman MD

Department of Neurological Surgery, Mayo Clinic Florida

University of Tennessee Health Science Center College of Medicine

Introduction

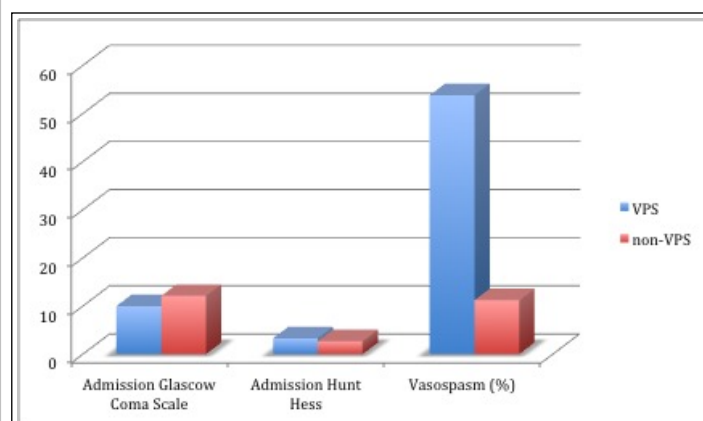
We aim to characterize the clinical predictors of ventriculoperitoneal shunt (VPS) placement in aneurysmal subarachnoid hemorrhage (aSAH) patients. There has been no clear consensus as to effective measures of predicting VPS placement in these patients.

Methods

We reviewed the clinical data of patients with aneurysmal subarachnoid hemorrhage (aSAH) who were treated at our institution between 2011-2013. We recorded patient demographics and clinical predictors including admission Glasgow Coma Scale (GCS), Hunt Hess score, and incidence of vasospasm requiring intra-arterial therapy.

Results

There were 177 patients admitted with subarachnoid hemorrhage between 2011-2013. Fifty-three of these were non-aneurysmal or had withdrawal of care/death and were excluded from our analyses. Twenty-one percent (n=26/124) of patients required VPS. Mean age was 57.69 +/- 13.73 for the VPS cohort and 55.61 +/- 15.05 for the non-VPS cohort. Mean admission GCS for the non-VPS placement cohort was 12.1 +/- 3.9 and mean admission GCS for patients who did not require VPS placement was 10.0 +/- 4.9 [Mean Difference (MD): 2.1; Confidence Interval (CI): -3.93 to -0.25; P=0.026]. Mean admission Hunt Hess was 3.3 for the VPS cohort 3.3 and 2.7 for the non-VPS cohort [MD: 0.63; CI: 0.06 to 1.21; P= 0.032]. 53.8% (n=14/26) of VPS patients had moderate-severe vasospasm requiring intra-arterial intervention versus 11.2% (n=11/98) of non-VPS patients [Risk Ratio (RR): 4.80; CI: 2.48 to 9.29; P=<0.0001].



Learning Objectives

By the conclusion of this session, participants should be able to:

1) Describe what factors can lead to an increased risk for shunt dependence in subarachnoid hemorrhage patients

2) Understand what clinical factors can differentiate patients who will end up requiring shunts and those who will not

Conclusions

Lower admission GCS, higher admission Hunt Hess score, and vasospasm requiring intra-arterial intervention are positive predictors of VPS requirement in aSAH patients.