Subarachnoid Hemorrhage Early Brain Edema Score

SEBES as a scale from 0 to 4 points. One point is assigned for the (1) absence of visible sulci caused by effacement of sulci or (2) absence of visible sulci with disruption of the gray–white matter junction at 2 predetermined levels in each hemisphere

(a) at the level of the insular cortex showing the thalamus and basal ganglion above the basal cistern and (b) at the level of the centrum semiovale above the level of the lateral ventricle [1)]

SEBES may be a surrogate marker of EBI and predicts DCI and clinical outcomes after SAH [2)].

SEBES is a reliable predictor of ICP-related complications and poor outcome of SAH. Findings highlight the need for further research of the impact of patients' demographic characteristics and comorbidities on the severity of EBE after SAH [3)].

SEBES 6c is more suitable for predicting outcome after SAH than SEBES. Furthermore, it predicts outcome and DI independently of vasospasm, so it can be used to differentiate between early brain injury- and vasospasm-dependent infarctions and outcome. However, SEBES and SEBES 6c are both age dependent and can be used for patients aged < 60 years and may have limited suitability for patients aged 60-69 years and no suitability for patients aged ≥ 70 years [4)].

1)
Claassen J, Carhuapoma JR, Kreiter KT, Du EY, Connolly ES, Mayer SA. Global cerebral edema after subarachnoid hemorrhage: frequency, predictors, and impact on outcome. Stroke. 2002 May;33(5):1225-32. doi: 10.1161/01.str.0000015624.29071.1f. PMID: 11988595.
2)
Ahn SH, Savarraj JP, Pervez M, Jones W, Park J, Jeon SB, Kwon SU, Chang TR, Lee K, Kim DH, Day AL, Choi HA. The Subarachnoid Hemorrhage Early Brain Edema Score Predicts Delayed Cerebral Ischemia and Clinical Outcomes. Neurosurgery. 2018 Jul 1;83(1):137-145. doi: 10.1093/neuros/nyx364. PMID: 28973675.
3)
SEBES is a reliable predictor of ICP-related complications and poor outcome of SAH. Our findings highlight the need for further research of the impact of patients' demographic characteristics and comorbidities on the severity of EBE after SAH.
4)
Eibach M, Won SY, Bruder M, Keil F, Herrmann E, Berkefeld J, Seifert V, Konczalla J. Age dependency and modification of the Subarachnoid Hemorrhage Early Brain Edema Score. J Neurosurg. 2020 Mar 20;134(3):946-952. doi: 10.3171/2019.12.JNS192744. PMID: 32197254.