VASOGRADE

Vasograde is a simple Grading Scale for Prediction of Delayed Cerebral Ischemia (DCI) after subarachnoid hemorrhage, combining the World Federation of Neurosurgical Societies scale and the Modified Fisher Grading Scale for Subarachnoid Hemorrhage [1)]

Categories

The VASOGRADE derived from previously published risk charts and consists of 3 categories:

VASOGRADE-Green

VASOGRADE-Green (modified Fisher scale 1 or 2 and World Federation of Neurosurgical Societies scale [WFNS] 1 or 2)

VASOGRADE-Yellow

VASOGRADE-Yellow (modified Fisher 3 or 4 and WFNS 1-3);

VASOGRADE-Red

VASOGRADE-Red (WFNS 4 or 5, irrespective of modified Fisher grade).

In a multiethnic cohort of patients with aSAH, VASOGRADE-Green predicted the absence of DCI and good clinical outcome at discharge with very high specificity, and patients in this category might be selected for early intensive care unit (ICU) discharge, minimizing costs and medical complications associated with a prolonged hospital stay. On the other hand, patients categorized as VASOGRADE-Yellow and VASOGRADE-Red were at the highest risk for DCI. They should, therefore, be selected as a priority for care in high-volume aSAH centers, being aggressively monitored for DCI at the ICU. Such stratification methods are crucial, especially in countries with low financial resources and high health care services demand [2)].

The relation between the VASOGRADE and DCI was assessed by logistic regression models. The predictive accuracy of the VASOGRADE was assessed by receiver operating characteristics curve and calibration plots.

In a cohort of 746 patients, the VASOGRADE significantly predicted DCI (P<0.001).

The VASOGRADE-Yellow had a tendency for increased risk for DCI (odds ratio [OR], 1.31; 95% CI, 0.77-2.23) when compared with VASOGRADE-Green; those with VASOGRADE-Red had a 3-fold higher

risk of DCI (OR, 3.19; 95% CI, 2.07-4.50). Studies were not a significant confounding factor between the VASOGRADE and DCI.

The VASOGRADE had adequate discrimination for prediction of DCI (area under the receiver operating characteristics curve=0.63) and good calibration.

The VASOGRADE results validated previously published risk charts in a large and diverse sample of subarachnoid hemorrhage patients, which allows DCI risk stratification on presentation after subarachnoid hemorrhage. It could help to select patients at high risk of DCI, as well as standardize treatment protocols and research studies [3].

1)
de Oliveira Manoel AL, Jaja BN, Germans MR, Yan H, Qian W, Kouzmina E, Marotta TR, Turkel-Parrella D, Schweizer TA, Macdonald RL; SAHIT collaborators. The VASOGRADE: A Simple Grading Scale for Prediction of Delayed Cerebral Ischemia After Subarachnoid Hemorrhage. Stroke. 2015 Jul;46(7):1826-31. doi: 10.1161/STROKEAHA.115.008728. Epub 2015 May 14. PMID: 25977276.
2)
Oliveira Souza NV, Rouanet C, Solla DJF, de Lima CVB, de Souza CA, Rezende F, Alves MM, de Oliveira Manuel AL, Chaddad Neto F, Frudit M, Silva GS. The Role of VASOGRADE as a Simple Grading Scale to Predict Delayed Cerebral Ischemia and Functional Outcome After Aneurysmal Subarachnoid Hemorrhage. Neurocrit Care. 2022 Aug 24. doi: 10.1007/s12028-022-01577-1. Epub ahead of print. PMID: 36002635.
3)
de Oliveira Manoel AL, Jaja BN, Germans MR, Yan H, Qian W, Kouzmina E, Marotta TR, Turkel-Parrella D, Schweizer TA, Macdonald RL; SAHIT collaborators. The VASOGRADE: A Simple Grading Scale for Prediction of Delayed Cerebral Ischemia After Subarachnoid Hemorrhage. Stroke. 2015 Jul;46(7):1826-31. doi: 10.1161/STROKEAHA.115.008728. Epub 2015 May 14. PubMed PMID: 25977276.