Barrow Neurological Institute

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see Barrow Neurological Institute Pain Scale.

Publications

see Barrow Neurological Institute Publications

In 2012, a new computed tomography (CT) grading scale was introduced by the Barrow Neurological Institute group (“BNI scale”) to predict angiographic and symptomatic vasospasm in aneurysmal subarachnoid hemorrhage.

To address the question of whether BNI grading is reliable in the prediction of cerebral infarction and clinical outcome and to compare BNI scores to existing radiographic and clinical models of outcome prediction.

Consecutive data of 260 patients with aneurysmal subarachnoid hemorrhage was retrospectively analyzed with respect to radiographic and clinical parameters.

Patients presenting with more severe BNI grades were older (P = .002), displayed lower Glasgow Coma Scale scores at admission (P < .001) and were more often diagnosed with intraventricular hemorrhage (P < .001). An increasing BNI grade was associated with higher rates of severe angiographic vasospasm (P = .007), the occurrence of new cerebral infarction (P < .001), and poor patient outcome (P < .001). In contrast, analysis according to the Fisher grading system did not show a significant relationship to any outcome parameter. Multivariate analysis combining radiographic and clinical parameters showed significant results for clinical scores (Hunt and Hess and World Federation of Neurosurgical Societies) with radiographic information losing its predictive capability.

The BNI scale is easily applicable and superior to the original Fisher scale regarding prediction of angiographic vasospasm, new cerebral infarction, and patient outcome. Presence of intraventricular hemorrhage and intracerebral hemorrhage are additional radiographic factors with outcome relevance that are not part of the BNI scale. Established clinical scores like World Federation of Neurosurgical Societies and Hunt and Hess grading were more relevant for outcome prediction than any radiographic information [1)].

1)
Dengler NF, Diesing D, Sarrafzadeh A, Wolf S, Vajkoczy P. The Barrow Neurological Institute Scale Revisited: Predictive Capabilities for Cerebral Infarction and Clinical Outcome in Patients With Aneurysmal Subarachnoid Hemorrhage. Neurosurgery. 2017 Feb 14. doi: 10.1093/neuros/nyw141. [Epub ahead of print] PubMed PMID: 28201763.