



Prognostic factors of delayed cerebral ischemia after subarachnoid hemorrhage including CT perfusion: a prospective cohort study

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Abstract:

Abstract Background and purpose: Delayed cerebral ischemia (DCI) is the worst sequel following subarachnoid hemorrhage (SAH), representing a challenge in prediction and prevention. The current study aims to identify the optimum predictors of DCI including CT perfusion (CTP) and to determine the best prognostic thresholds. **Material and Methods:** A prospective study included 49 SAH patients. All patients were treated with the standard therapy and underwent non-contrast CT, CTP, and CTA within 3 days after SAH. Hunt and Hess and Fisher scales were assessed besides quantitative CTP parameters. The primary endpoint was DCI within 21 days after SAH, defined as clinical deterioration or infarction. **Results:** Out of 49 eligible patients with SAH, 9 patients developed DCI. Univariate analysis revealed that Hunt and Hess scale, Fisher scale, presence of a cerebral aneurysm and mean transit time (MTT) were predictive for DCI. Diagnostic threshold values by ROC curve analysis with optimal sensitivity and specificity were Hunt and Hess > 2, followed by Fisher > 2 and MTT of 4.65 seconds. **Conclusion:** MTT is a sensitive and specific predictor of DCI. However, thresholds of Hunt and Hess is the best to distinguish between patients who developed DCI and clinically stable patients.

Keywords:

Keywords: CT perfusion; delayed cerebral ischemia; Fisher scale; Hunt and Hess scale; subarachnoid hemorrhage; vasospasm.

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