CT perfusion (CTP) is used to identify perfusion deficits and to guide treatment decisions. In a study, Malinova et al., aimed to evaluate CTP parameters and to establish cutoff values for DCI prediction in the early phase after aneurysmal subarachnoid hemorrhage(aSAH). Whole-brain CTP was performed on day 3 after aSAH. These CTP parameters were analyzed: cerebral blood flow (CBF), cerebral blood volume (CBV), mean transit time (MTT), time to peak (TTP), time to start (TTS), and time to drain (TTD). ROC analysis was performed to establish cutoff values. The outcome (modified Rankin scale (mRS)) at 3 months follow-up and the DCI incidence were evaluated. A total of 64 patients were included. A good World Federation of Neurosurgical Societies grading (I-III) was documented in 44% of the patients. A mild modified Fisher grade (1-2) was seen in 3% of the patients. Early perfusion deficits were found in 18 of 64 patients and 10 of them developed DCI. For DCI prediction, the following cutoff values were identified: TTD > 4.93 s, CBF < 53.93 ml/100 ml/min, MTT <> 4.25 s, TTS > 0.94 s, TTP > 9.28 s, and CBV < 3.14 ml/100 ml. The positive predictive value (PPV)/negative PV (NPV) was as follows: TTD 77%/93%; CBF 94%/70%; MTT 72%/96%; TTS 71%/86%; TTP 55%/78%; CBV 75%/61%. Early perfusion deficits correlated with DCI (logistic regression $p < 0.0001$) but not with outcome. CTP on day 3 after aSAH allows reliable DCI prediction. TTD had high NPV/PPV for DCI prediction and should be an integral part of quantitative CTP analysis in the early phase after aSAH [1].

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Malinova V, Tsogkas I, Behme D, Rohde V, Psychogios MN, Mielke D. Defining cutoff values for early prediction of delayed cerebral ischemia after subarachnoid hemorrhage by CT perfusion. Neurosurg Rev. 2019 Feb 2. doi: 10.1007/s10143-019-01082-8. [Epub ahead of print] PubMed PMID: 30712134.