Bispectral index (BIS) is one of several technologies used to monitor depth of anesthesia. BIS monitors are used to supplement Guedel's classification system for determining depth of anesthesia.

Hernández-Hernández et al. evaluated the bispectral index (BIS) monitoring to detect delayed cerebral ischemia (DCI) after aneurysmal subarachnoid hemorrhage (aSAH).

Materials and methods: A single-center prospective study in patients with aSAH. BIS monitoring was recorded during 25-120 min in two periods, within the initial 72 h (BIS1) and between days 4 and 6 (BIS2) from admission. The median for each exported BIS parameter was analyzed. Transcranial Doppler (TCD) sonography was simultaneously performed with BIS1 (TCD1) and BIS2 (TCD2) monitoring. A multivariate logistic regression model was built to identify the variables associated with DCI.

Results: Sixty-four patients were included and 16 (25%) developed DCI. During BIS2 monitoring, significant differences were found in BIS value (left, $p = 0.01$; right, $p = 0.009$), 95% spectral edge frequency (left and right, $p = 0.04$), and total power (left and right, $p = 0.04$). In multivariable analysis, vasospasm on TCD2 (OR 42.8 [95% CI 3.1-573]; $p = 0.005$), a median BIS2 value <85 in one or both sides (OR 6.2 [95% CI 1.28-30]; $p = 0.023$), and age (OR 1.08 [95% CI 1.00-1.17]; $p = 0.04$) were associated with the development of DCI.

Conclusions: BIS value is the most useful BIS parameter for detecting DCI after aSAH. Pending further validation, BIS monitoring might be even more accurate than TCD [1]

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[1]

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