Performance of the A-line Autoregressive Index (AAI) and of the Bispectral Index (BIS) at Assessing Depth of Short-term Sedation Following Cardiac Surgery

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This study evaluated the correlation and agreement between the Bispectral Index (BIS) or A-line Autoregressive Index (AAI) and a clinical scoring system, the Ramsay Sedation Scale (RSS), in 40 patients after elective cardiac surgery and admission to the intensive care unit. All patients received sedation with propofol according to the study protocol. BIS, AAI and RSS were documented at two different levels of sedation: deep sedation RSS 4 – 6, and slight sedation/extubation RSS 2 – 3. Both the BIS and AAI agreed well with the RSS (η-coefficients of 0.902 and 0.836, respectively, for mean overall RSS stages). The systems agreed well among each other (overall intra-class correlations of 0.670 for consistency and 0.676 for absolute agreement). There was significant discrimination between RSS 2 – 3 and RSS 4 – 6 with BIS and AAI (BIS mean difference 24.73, 95% confidence intervals [CI] 21.08 – 28.37; AAI mean difference of 20.90, 95% CI 14.64 – 27.16). In conclusion, BIS and AAI correlated well with RSS overall and also at different levels of sedation.

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