

Comparison of the reliability and stability of two depth of anaesthesia monitors.

P. Pineda¹, E.W. Jensen¹, M. Jospin¹, P. Gambus²

¹Center for Biomedical Engineering Research, UPC BarcelonaTech, ESAII, Barcelona, Spain.

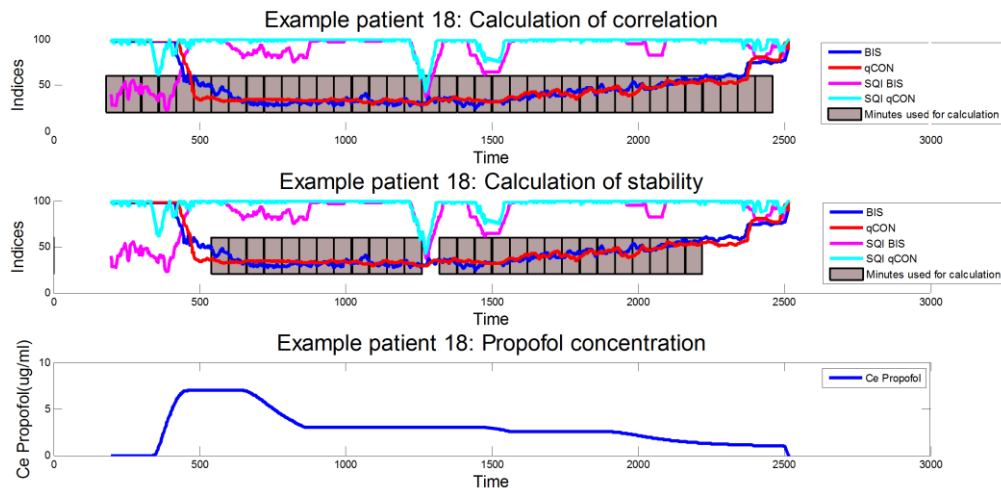
²Hospital Clinic Barcelona, Anesthesiology Dpt, CMA-Section, Barcelona, Spain.

Introduction:

The objective of the present study was to compare the stability of two depth anaesthesia indices, qCON (qCON, Quantum Medical, Spain) and BIS (BIS VISTA, Aspect Medical Systems, USA). Both indices are derived from the frontal EEG.

Methods:

Data were recorded from 61 patients scheduled for general anaesthesia with propofol. The mean for each minute was calculated for the effect-site concentration of propofol (Ce Propofol), qCON and BIS. The Ce Propofol was divided in 6 levels (0-1; 1-2; 2-3; 3-4; 4-5; >5 µg/ml). The prediction probability, Pk, was used to assess the ability of the qCON and BIS to predict the Ce Propofol. The standard deviation of each minute was calculated during anaesthesia (qCON and BIS lower than 60) if the qCON and BIS were in the same range. Frames with low signal quality were excluded. T-test was used to assess significant difference.



Results:

The prediction probability, Pk, between Ce Propofol and qCON was 0.83 while between Ce Propofol and BIS Pk was 0.86. It was not significantly different ($p > 0.05$). During anaesthesia the mean value for standard deviation over one minute for qCON was 1.5 while for BIS it was 2.24. This difference was significant ($p < 0.05$).

	qCON	BIS	P-value
Reliability (Pk)	0.83	0.86	$P > 0.05$
Stability (SD)	1.5	2.24	$P < 0.05$

Conclusion:

The qCON is as reliable as BIS and has higher stability during anaesthesia.