Sedation after Spinal Anesthesia in Elderly Patients: A Preliminary Observational Study with the PSA-4000.

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Purpose

Neuraxial blockade is known to have a sedative effect, decreasing the need for inhalational and iv anesthetic agents. The purpose of the present study was to quantify the sedative effect of spinal anesthesia and to determine the time of maximum sedation.

Methods

This is an observational study in which 20 unsedated patients were scheduled to undergo urologic and orthopedic surgeries under spinal anesthesia. Patients with pre-existing neurological conditions or receiving psychotropic medications were excluded from the study. All received 1.5 mL (11.25 mg) of hyperbaric bupivacaine 0.75% intrathecally. No sedative or narcotic was administered intravenously or intrathecally. The Patient State Analyzer, (PSA-4000) was used to monitor sedation along with Observer's Assessment of Alertness and Sedation (OAA/S) scores every five minutes. Differences in patient state index (PSI) and OAA/S scores are expressed as median and range and were evaluated by Wilcoxon's signed rank test for non-parametric data; $P < 0.05$ was considered significant. PSI, OAA/S and time at lowest score are expressed as median(range).

Results

PSI scores decreased from baseline 99 (96-99) to 78 (56-87) at 35(14.5-54) min into the spinal anesthetic ($P < 0.05$). OAA/S scores decreased from baseline 5 to 4 (range 3-5) at the time of the lowest PSI scores ($P < 0.05$).

Conclusions

In this elderly patient population, spinal anesthesia induced changes in the processed electroencephalogram with reduction in PSI and OAA/S scores. The reduction in afferent input to the reticular activating system could possibly explain the sedation that has been observed and the reduction in the PSA scores.