

**Title:** Difference between bispectral index and sedation level in Age-dependent relationship

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**Aims:** To determine the difference between bispectral index (BIS) and sedation level in age-dependent relationship, we performed the prospective, observational clinical study in an intensive care unit of a university hospital.

**Methods:** Twenty-two ASA physical status I, II, and III middle-aged (18-65 yrs) and elderly ( $\geq 65$  yrs) patients receiving postoperative sedation with midazolam.

Interventions: Patients were allocated to two groups: Group M was composed of middle-aged patients (<65 yrs) and Group H was elderly patients (>65 yrs). Midazolam was administered at a bolus dose of 0.1 mg/kg, followed by a continuous dose of 0.04 mg/kg per hour, which was adjusted every two hours to achieve a target level of sedation at 3-6 on the Ramsay Sedation Scale (RSS).

Measurements: BIS value, RSS, midazolam dose, body temperature (BT), heart rate, dopamine dose, and mean arterial pressure were recorded every two hours by an independent nurse. Data were analyzed using Spearman rank correlation and the Mann-Whitney U test.

**Results:** BIS values decreased depending on depth of sedation; a significant correlation was noted between groups in RSS and BIS. The BIS values at levels of RSS 5 and 6 were significantly lower in Group H than Group M.

**Discussion:** BIS correlated with sedation depth, with BIS scores in group H than group M at a deep sedation depth.

**Title: Study of long term Dexmedetomidine Usage in Elderly ICU Patients**

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**Aims:** Dexmedetomidine, a highly selective  $\alpha_2$  agonist used for short-term sedation, may equal benzodiazepines for sedation in the ICU and with less delirium for elderly patients if long term application. We performed the prospective, observational clinical study in an intensive care unit of a university hospital to verify the hypothesis.

**Methods:** It randomized 27 elderly ventilator patients in ICU for at least 72 hours to receive double-blind dexmedetomidine (D-Group, 0.2 to 1.4  $\mu\text{g}/\text{kg}/\text{hour}$ ) or midazolam (M-Group, 0.02 to 0.1  $\text{mg}/\text{kg}/\text{hour}$ ) until extubation or for seven days. Sedation was targeted to the -2 to +1 range on the Richmond Agitation Sedation Scale (RASS) and could be supplemented with midazolam or fentanyl boluses for patients outside the target range. Data were analyzed using the Mann-Whitney U test.

**Results:** About two-thirds of the D-Group patients received a maintenance dose greater than the labeled 0.2 to 0.7  $\mu\text{g}/\text{kg}/\text{hour}$ . Rescue midazolam use was more common with D-Group than with M-Group, but fentanyl use was about the same. About half of the patients in both groups had delirium at baseline using the Confusion Assessment Method for ICU. In the intent-to-treat analysis, the 14 D-Group patients spent a similar amount of time in the RASS sedation range as did the 13 M-Group patients. D-Group patients also had a 33.2% reduction in time to successful extubation and a 21.3% reduction in time until readiness for ICU discharge. Bradycardia was more common with D-Group but tachycardia) and elevated systolic blood pressure were less common than with M-Group.

**Discussion:** Some of the data from this study will get a more prolonged basis for use of dexmedetomidine beyond 24 hours for the elderly patients.

**Title:** The gynecological TURP syndrome

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**Introduction:** Hypotonic, electrolyte-free distention media have the potential to be absorbed in volumes large enough to cause dilutional hyponatremia and hypervolemia, complications initially described as endoscopic transurethral resection of the prostate (TURP) syndrome. The availability of adequate endoscopic instruments has led to an increased interest in hysteroscopic surgical procedures. Less commonly, this complication caused by excessive absorption of hypotonic, electrolyte-free non-conductive distention solution, may also occur during endoscopic surgery of the uterus.

**Case Presentation:** A hysteroscopy requires the insertion of a hysteroscope into the uterine cavity and the installation of a suitable distention medium for visualization of the endometrium. An electrolyte-free irrigation fluid is essential for the distention of the uterine cavity, with acceptable uterine distention occurring at 80-150 mmHg. A 44-year-old woman scheduled for operative hysteroscopy for intracavitary myoma under general anaesthesia, suffering from severe absorption syndrome leading to hyponatremia of 106 mEq/l and pulmonary edema necessitating subsequent admission to ICU.

**Discussion:** Analogous to the TUR syndrome, intravasation occurs through the vascular spaces opened during large ablative surgical procedures resulting in the absorption of the fluid used for irrigation. Occasionally, a tear in the lower uterine segment from dilation or perforation of the uterus may expose large vascular channels. Outflow through the tubes is not a significant factor. Continuous CVP measurement allows the detection of intravascular absorption of the irrigation fluid and may be included in the routine monitoring for these procedures. The duration of the hysteroscopic procedure should be limited to 60 min. Potential risks include fluid volume overload, uterine perforation, hemorrhage, infection, and the need for immediate hysterectomy.