Perioperative risk factors for postoperative delirium (POD) on elderly patients undergoing urological surgery.

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Background and Goal of Study: Older age is characterized by aging of tissues and organs, a greater occurrence of cognitive decline and functional impairment and an increasing number of frail subjects.

These frail elderly are more prone to several complications including delirium, which affects approximately one fourth of the hospitalized older patients and a wide range of post-surgical elderly. The elderly are a large group of patients undergoing urological surgery, both for endoscopic and for open surgery and POD is an important issue in the daily clinical practice. As a consequence of acute confusion (delirium), there is a greater functional decline, an increased morbidity, a longer stay in the acute hospital unit. The increased average population age in Albania, and in the entire world, leads to an increased number of patients that are elderly and that undergo surgery.

The aim of this observational study was to investigate the occurrence of postoperative delirium (POD) in elderly patients undergoing urological surgery and to identify those factors associated with delirium.

Materials and methods: This study is a prospective. Participants of this study are 1496 patients older than 65 years old, while they were admitted to the urology department, between January 2010 – December 2012.

All patients are evaluated preoperatively on MMSE. Patients with MMSE <23 were excluded from the study. The comparing value that was used for delirium was CAM. Patients that had been diagnosed and treated for psychiatric problems (Alzheimers, Dementia senile, Schizophrenia) were excluded from the study.

Routine preoperative blood test was performed including a complete blood count, a serum electrolyte panel, a liver function test, a urinalysis; analyses were performed. Chest radiogram, electrocardiogram (ECG) were also collected. Intra-operative data from the anesthesia record were also reviewed. Systolic and diastolic blood pressure were monitored every 5-10 min during the operation and any systolic blood pressure drop in relation to the blood pressure before administration of anesthesia were recorded in percentages. Hypotension was defined as a systolic blood pressure decline to <90 mmHg requiring vasopressors or fluids resuscitation. Duration of hypotension was also recorded. Particular attention was taken to avoid low oxygen saturation or pain in the postoperative period. Oxygen was administered at regular intervals according to the clinical request; pain was generally controlled with a lumbar epidural catheter, or morphine s/c, non-steroidal anti-inflammatory.

Results and discussion: It is noticed a linear statistically important trend of increase in the incidence of delirium with the increasing of age. (χ^2 for trend = 14.3 $p < 0.01$). POD occurred in 270 patients (18%).

The patients who were alcohol users had the highest incidence of POD. From 140 were alcohol users POD made 60 of them (57.1%) (RR = 8.1, 95% CI = 5.6-11.8, $p < 0.01$). The patients that were preoperatively users of benzodiazepines had a higher incidence of post-operative delirium. (29.7%) (RR = 2.7, 95% CI = 2.04- 3.59, $p < 0.01$).

From 1496 only 40 patients (2.6%) had epidural catheter. In these patients post-operative pain was managed best. From these 40 patients, only 4 (10%) had delirium versus 36 (90%) that did not have delirium with an important statistical difference between them ($p < 0.01$). It noted that all patients who had contact with their families after the operation 306 (100%) did not have delirium, while the 150 patients who did not have contact with the family 50 (33.3%) had delirium with a significant statistical difference between them ($p < 0.01$). One or more comorbidity conditions were more frequent (62.5%) in the delirious patients than in the non-delirious patients (55%), but the difference was not statistically significant (n.s.) ($\chi^2 = 18.1$ $p < 0.01$). Delirium was more evident in male patients and spinal post-anesthesia. There was an important statistical difference $p < 0.05$, when comorbidity pre-operatively is associated with changes on hemodynamic intra-operatively and with not efficient pain management.

Conclusion: Every elderly person is unique when it comes to the incidence of post-operative delirium. Combining some of the predisposing factors such as advanced age, use of alcohol, benzodiazepines, hemodynamic fluctuations, preoperative comorbidity, pain, miscommunication the family members, altogether increase the risk for delirium post-operatively in elderly patients.

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