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Abstracts

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09AP10-3
Post- operative delirium : risk factors

Tonelotto B.[1], Simões C.[1], Pinn F.[1]
[1]*Sírio-Libanes Hospital - Sao Paulo (Brazil)*

Background and Goal of Study: Delirium is one of the most comum postoperative complication in old patients. There are a lot of associated risk factors, the aim of this study is to identify these factors.
Materials and Methods: we analyzed the medical records of patients undergoing total hip arthroplasty during the period August 2013 to January 2014 and who were admitted to the intensive unit (ICU) ; 102 subjects . Patients with suspicion of delirium at admission underwent evaluation by means of the CAM -ICU (Confusion Assessment Method in the Intensive Care Unit) , applied by the nurses. Through the analysis of medical records, we identified risk factors for delirium selecting the most incidents for analysis : systemic hypertension (SH), heart failure (CHF), chronic renal failure (CRF), diabetes, dyslipidemia, perioperative bleeding, transfusion and length of stay in the intensive care unit (ICU); in addition to gender , age , surgical time, type of anesthesia and blood transfusion. For statistical evaluation we used descriptive analysis and binary logistic regression using the SPSS software .
Results and Discussion: The sample was 102 subjects, 50 females, aged between 51 and 91 years. Third two had delirium at some time in hospital. Was held initially a descriptive analysis of the results to verify the correlation of risk factors with delirium. We used binary logistic regression in an attempt to replicate a model that had high sensitivity estimate in patients with low likelyhood of developing delirium. Upon repeated analysis, was obtained as a prototype compound of the variables: male; not have: IRC , hypertension ; less than 24 hours of ICU admission , obtaining 92.9 % sensitivity in identifying patients with a low likelihood of developing delirium. We calculated odds ratios still each variable: Female (OR: 4.17/95% CI 1.39 to 12.51) , CRF (OR: 7.55/95% CI:1.63 to 34.89), hypertension (OR: 5.47/95 % CI:1,68 to 18), more than 24 hours in the ICU (OR: 3.07/95% CI : 1.42 to 6.66). The ICC variable was excluded from the analysis because all patients with this comorbidity developed delirium postoperatively; can generate a statistical interference.
Conclusions: Female, kidney disease, hypertension and more than 24 hours in the ICU is the most incident risk factors for delirium. The results of this study are not conclusive, for the definitive diagnosis of exclusion of post- operative delirium, however, proposes a discussion about this complication

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09AP10-4
Characteristics of Postoperative Delirium in Intensive Care Unit using Heart Rate Variability (HRV) in Night Time Recording

Satomoto M.[1], Echizen M.[2], Miyajima M.[3], Adachi Y. U.[4], Matsushima E.[3], Ochiai R.[1]
[1]*Toho University School of Medicine - Tokyo (Japan),* [2]*Department of Anesthesiology, Tokyo Medical and Dental University, Medical Hospital and Tokyo Bay Urayasu Ichikawa Medical Center - Tokyo (Japan),* [3]*Department of Psychiatry, Tokyo Medical and Dental University - Tokyo (Japan),* [4] *Department of Surgical Intensive Care Medicine, Nagoya University Hospital - Nagoya (Japan)*

Background and Goal of Study: Delirium is recognized as a significant contributor to postoperative morbidity and mortality in intensive care unit (ICU). The early detection and appropriate intervention are indispensable. We previously showed that high frequency (HF) power which given electrocardiogram (ECG) measurement on the day before surgery was significantly decreased in delirium patients (2). HF power is considered as parasympathetic nerve activity. The significant decrease of HF power in delirium patients indicates that preoperative deficiency of autonomic nerve system may be related to postoperative delirium. There are no data of HRV measurements during night time in ICU in regardless of delirium. The aim of study is to compare HRV analysis between postoperative delirium patients and non-delirium patients during postoperative day (POD) 1 night and POD2 night.
Materials and Methods: This study was approved by the Institutional Review Board. Informed consent was obtained from patients scheduled for esophageal cancer surgery. ECG were recorded on POD1 night and POD2 night. The patients were induced general anesthesia with epidural anesthesia. The patients of trachea were extubated in the morning on POD1 and subsequent management was continued in ICU. Based on medical interview, the psychiatrists diagnosed delirium.
Results and Discussion: Twenty patients completed the study schedule and were analyzed. One person was excluded because of atrial fibrillation. Five of them experienced delirium (delirium group) and 14 of them did not (non-delirium group). Except sex there are no difference between two groups. The preoperative HRV data showed that HF power in the delirium group was low compared to non-delirium group on both POD1 and POD2 (Welch t test, $P < 0.05$). HF power reflects parasympathetic nerve activity. It is considered that disorder of autonomic nervous system causes sleeplessness. Furthermore sleeplessness is a major risk factor of delirium. Three lead ECG is non-invasive and HRV measurement is useful method for autonomic nerve activity. Furthermore HRV measurement might help the diagnosis of postoperative delirium.
Conclusions: In this study, postoperative ECG showed the significant decrease in HF power in the delirium patients on POD1 and POD2.
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09AP10-5
Using of dexmedetomidine in a patient with severe pain syndrome.

Hovenko Y.[1], Megera V.[1], Volkova Y.[1]
[1]*Kharkiv National Medical University - Kharkiv (Ukraine)*

Background: Patients in intensive care unite (ICU) often need sedation. Level of sedation is selected individually for a specific situation[1]. But this shouldn't prevent early rehabilitation. Dexmedetomidine (DEX) was used for the clinical situation described below because of its ability to enhance the effects of opioids[2].
Case Report: A 20-year-old man was admitted to Regional Center of Oncology to the Department of Abdominal Surgery with suspected pancreatic cancer. He complained of severe pain in the left knee, weakness in the left foot, recurrent pain in the right leg, difficulty walking, lumbar pain, left ptosis, diplopia, headache, general weakness. Because of the severe pain he was transferred to the ICU. In CT scans neoplastic process of the pancreas, focal lesions of the kidneys, adrenal glands, omentum, retroperitoneal mesenteric lymphadenopathy, hepatosplenomegaly, ascites was found. Lumbar spine MRI showed signs of multiple lesions of the cauda equina, spinal nerves at the lumbar level andlymphadenopathy, manifestations of lymphoproliferative disease. Microscopic examination result - non-Hodgkin's lymphoma. Laboratory tests were conducted. Special treatment cannot be started without the results of immunohistochemistry. Symptomatic therapy in the ICU was initiated. The first 4 days patient received combined analgesic therapy: morphine (40 mg/day) IM, parecoxib (80 mg/day) IV, nalbuphine (10mg/day) IM. We decided to add to therapy DEX for sedation and potentiation of the action of opioids. In the next 4 days the patient received DEX (0.5 μg/kg/h) as an IV infusion, morphine (20 mg/day) IM, parecoxib (80 mg/day) IV. After the correction of pain syndrome the patient was transferred to oncohematology unit for special therapy.
Discussion: As a result of the addition of DEX to therapy we were able to reduce the number of opioids, as well as to eliminate the patient's agitation. In addition the level of sedation allowed maintaining full contact of medical staff with a patient[2]. We believe that using of DEX will ensure patient comfort and help with pain syndrome treatment.
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Learning points: DEX allows reducing the number of opioids and achieving a sufficient level of sedation.

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09AP10-6
Evaluation of a visual noise warning system on noise levels and patients' sleep quality in a surgical intensive care unit.

Guisasola Rabes M.[1], Solà Enríquez B.[1], Vélez-Pereira A.[2], Vazquez C.[1], Butron D.[1], De Nadal M.[1]
[1]*Hospital Vall D'hebron - Barcelona (Spain),* [2]*Environmental Engineering, Engineering Faculty, Universidad Tecnologica de Bolivar - Cartagena de Indias (Colombia)*

Background and Goal of Study: The effects of noise are harmful to patients in the ICU environment, which are particularly noisy places (1). High noise levels seem to be a factor in sleep disturbance, which can in turn result in increased morbidity (2, 3). We aimed to determine whether the implementation of a visual noise warning system had an effect in reducing noise levels in a surgical ICU and if this showed an improvement in patients' quality of sleep.
Materials and Methods: An analytical, observational and interventional study was conducted in a 12 bed surgical ICU. Noise levels were continuously recorded using a Type II sound level meter for 6 weeks. On the third week of study, a visual noise warning system (SoundEar II ®) which changed colour depending upon noise levels inside ICU, was put in place and switched off in the beginning of the fifth week. Sleep quality was evaluated using the Richards-Campbell Sleep Questionnaire (RCSQ).
Results and Discussion: Mean noise night time levels in the pre-intervention period were of 55.98 dBA, during the intervention they were reduced to 54.14 dB and the post-intervention period showed mean levels of 54.98 dBA. Mean noise levels were significantly reduced by 1.35 dBA (CI 95% 0.63 to 2.08, $p < 0.001$) with a sustained reduction of 0.86 dBA from baseline noise levels two weeks after the SoundEar II ® was switched off. Mean RCSQ scores during the three study periods were similar (period 1: 56.53mm, period 2: 54.75mm, period 3: 50.84mm). A correlation was found when analysing individual nights, with higher noise levels at night showing lower RCSQ scores (r= -3.92, CI95%; -7.57 to -0.27, p=0.04).
Conclusions: Visual noise warning systems can be an effective tool in providing a reduction in noise levels in critical care units and in turn aiding in quality of sleep in critically ill patients.
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