Perioperative risk assessment in neurosurgery

- A New Predictor Score for Postoperative Seizures in Brain Tumor Patients Without a Seizure History (BRAINNN Score)
- Risk factors and prognosis of post-surgical acute kidney injury in elderly patients based on the MIMIC-IV database
- Evaluation of Adverse Events and the Impact on Health-Related Outcomes in Patients Undergoing Surgery for Metastatic Spine Tumors: Analysis of the Metastatic Tumor Research and Outcomes Network (MTRON) Registry Dataset
- Incidence and risk factors of dysphagia after cervical laminoplasty
- Serum biomarkers as early indicators of outcomes in spontaneous subarachnoid hemorrhage
- Development and validation of a nomogram to pediatric postoperative pulmonary complications following thoracic surgery
- The impact of frailty on functional recovery and discharge dispositions in patients undergoing urgent neurosurgical care
- Accuracy and safety assessment of subaxial cervical pedicle screw instrumentation: a systematic review

Perioperative risk assessment is the process of evaluating the potential risks and complications associated with a surgical procedure or intervention. It involves assessing various factors related to the patient's health status, medical history, and the nature of the surgery to determine the likelihood of adverse events occurring during or after the procedure.

Here are some key aspects considered during perioperative risk assessment:

Patient-related factors: The patient's age, overall health status, underlying medical conditions (such as heart disease, diabetes, respiratory disorders), and any previous surgeries are evaluated to understand their overall physiological condition and potential risks.

Surgical factors: The type, complexity, and invasiveness of the surgical procedure are assessed. Certain surgeries, such as major abdominal or cardiac procedures, carry higher risks compared to minor or minimally invasive surgeries.

Functional capacity: The patient's functional capacity and ability to withstand the physiological stress of surgery are evaluated. This includes assessing their exercise tolerance, activities of daily living, and any limitations due to their medical condition.

Laboratory and diagnostic tests: Preoperative tests such as blood work, electrocardiograms (ECGs), chest X-rays, and other relevant diagnostic studies may be conducted to assess the patient's organ function, identify any pre-existing abnormalities, or detect potential risks.

Anesthesia-related considerations: The patient's response to anesthesia and their ability to tolerate anesthesia and surgery are evaluated. Factors such as allergies, medication use, history of adverse reactions to anesthesia, and anticipated anesthesia requirements are considered.

Risk-scoring systems: Various scoring systems, such as the American Society of Anesthesiologists (ASA) Physical Status Classification System or the Revised Cardiac Risk Index (RCRI), may be utilized to quantify the patient's overall risk level and guide decision-making.

Multidisciplinary input: Perioperative risk assessment often involves input from a multidisciplinary team, including surgeons, anesthesiologists, nurses, and other healthcare professionals. Collaboration among these experts helps in comprehensive risk evaluation and determination of appropriate management strategies.

The goal of perioperative risk assessment is to identify and stratify the patient's risk levels, guide perioperative management decisions, and implement appropriate measures to minimize or mitigate the identified risks. It enables healthcare providers to tailor perioperative care, optimize patient outcomes, and enhance patient safety during the surgical process. It is important to note that perioperative risk assessment should be individualized, taking into account the unique characteristics and needs of each patient.

James K. Perioperative risk assessment. Br J Hosp Med (Lond). 2023 Jun 2;84(6):1-2. doi: 10.12968/hmed.2023.0059. Epub 2023 Jun 20. PMID: 37364875.

A prospective study aimed to test changes in hemostasis in patients with GBM, occurring at baseline (before surgery, time 0, T0) and 2 (T2), 24 (T24), and 48-hour (T48) after surgery. Leal-Noval et al. enrolled consecutive patients subjected to GBM resection (GBR group; N = 60), laparoscopic colon cancer resection (comparative CCR group; N = 40), and healthy blood donation group (HBD group; N = 40). They performed 1. conventional coagulation tests 2. ROTEM (rotational thromboelastometry) parameters and 3. platelet function tests, including PFA-200 closure time when stimulated by collagen/epinephrine (COL-EPI) and ROTEM platelet, using three different activators (arachnoid acid in ARATEM, adenosine diphosphate in ADPTEM, and thrombin receptor-activating peptide-6 in TRAPTEM). Variables associated with unfavorable 1-year clinical outcome were investigated, too. They observed in GBR patients that platelet aggregometry, as assessed by ROTEM platelet parameters, was significantly impaired along with a shortened closure time. These changes were evident from T0 to T48. A decreased area under the aggregation curve in TRAPTEM was associated with improved survival (adjusted odd ratio (95% CI), 1.03 (1.01-1.06)). This study suggests that patients with GBM presented a decreased platelet aggregation from before surgery and thorough the postoperative period. Decreased platelet aggregation improved clinical outcome ¹.

1)

Leal-Noval SR, Casado M, Palomares C, Narros JL, García-Garmendia JL, Escolar G, Cuenca DX, Görlinger K. Prospective assessment of platelet function in patients undergoing elective resection of glioblastoma multiforme. Platelets. 2023 Dec;34(1):2216802. doi: 10.1080/09537104.2023.2216802. PMID: 37246516.

From: https://neurosurgerywiki.com/wiki/ - **Neurosurgery Wiki**

Permanent link: https://neurosurgerywiki.com/wiki/doku.php?id=perioperative_risk_assessment

Last update: 2024/06/07 02:49

