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Short Communication

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Risk Stratification in Medicine and Surgery

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Abstract

Advanced age and multiple comorbidities pause a challenge for modern medicine and especially modern surgery. In an attempt to predict the postoperative course of a patient planned for a surgical intervention, a procedure called risk stratification must be implemented. This includes the use of risk scores and preoperatively performed specialized examinations, such as phase angle and handgrip strength. The application of these tests seems to give reliable predictions in regard to postoperative mortality, morbidity and total length of hospital stay. Further studies must take place in order to secure these results for all surgical disciplines and for more subgroups of patients.

Keywords: Modern medicine; Surgery; Morbidity

Short Communication

Modern medicine and especially modern surgery have to deal with patients of increasingly advanced age, comorbidities and biological frailty. Patients with chronic cardiac, respiratory or kidney disease, patients with malignant morbidity and patients in need of major surgery (cardiothoracic, brain, or abdominal surgery) often pause a challenge for the medical team as their general condition and the planned procedure are statistically associated with significant mortality and complications, even in the best and most specialized hands.

The evaluation of the perioperative risk for mortality and morbidity in regard to surgical procedures is part of an evidence-based medicine procedure called risk stratification. This includes the application of preoperative risk scores, among others the Euroscore, the Society of Thoracic Surgeons score and the Thoracoscore. It is also related with further tools of evidence-based medicine, called "clinical indicators of quality and performance", such as perioperative mortality, incidence of reoperation, incidence of readmission, disease- free and overall survival. Two main advantages risk stratification offers are:

i. it allows us to properly prepare patients with augmented risk preoperatively and;

ii. it allows us to properly inform patient and relatives for the anticipated risk as part of the informed consent procedure.

Two extra tools used to assess the biological condition of a patient, or, to put it otherwise, his biological frailty, are handgrip strength (HGS) measured with the application of a dynamometer and phase angle (PA), measured via bioelectrical impendance [1-2]. PA reflects the proper function of the cellular membranes and the tissues in general. Low or unchanged values in critical patients are associated with increased interstitial fluid retention, septic

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conditions and generally bad or non-progressing health status.

Recently, a combination of both examinations, HGS and PA was examined in cardiac surgical patients, proving that they can be used, both separately and combined and in combination with other demographic and procedure-related parameters to evaluate and predict the postoperative mortality, the postoperative length of stay in the ICU and the total hospital length of stay [3]. We believe that the same combination can be used for thoracic surgical oncological patients and for other patients awaiting a surgical intervention for malignant disease or for other forms of major surgery. Of course, this must be done in a coordinated fashion, through a well-planned prospective study or studies.

To conclude with, the proper treatment of patients facing major surgery goes through proper risk assessment and proper preoperative preparation. Any methods contributing in this direction must be encouraged and are welcome for the sake of our patients.

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