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Categorical measurements of subjectiveness: is there still a role for the ASA classification?

Avaliações categorizadas da subjetividade: a classificação ASA ainda tem um papel a desempenhar?

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In 1941, Saklad proposed a classification system that attempted to assess and measure a patient's physiologic reserve before a surgical procedure.⁽¹⁾ After undergoing a few modifications, it became widely known as the American Society of Anesthesiologists (ASA) physical status classification system.⁽²⁾ It became widely used and became part of the routine pre-operative assessment in many countries (it is also used for billing reasons in the United States).⁽²⁾ It is an apparently simple classification system that has been frequently shown to be associated with morbidity and mortality.

The ASA classification system was revolutionary in its field.⁽²⁾ Contrary to modern prognostic scores,^(3,4) the ASA relies on an apparently simple principle: outcome depends on the patient's previous comorbidities and how those comorbidities affected the patient. If comorbidities affect the patient's physiologic reserve, then less remains for withstanding surgical stress. As statistics interweaved into medicine, prognostication began to rely on more objective, "palpable" features. As a result, none of the most commonly used severity indexes applied in the modern intensive care units setting incorporate any measure of previous performance status,^(3,4) despite the fact that performance status has been repeatedly shown to have prognostic significance.^(5,6) Even scoring systems aimed at predicting morbidity after surgery, such as POSSUM, P-POSSUM and SORT,^(7,8) fail to account for performance status. There are some reasons for this. First, objective measurements are less prone to personal and local bias. For example, heart rate assessment is performed in the same manner everywhere, as is the case for blood pressure, pH, etc. In contrast, the ASA score varies widely from person to person, as it is subjective. Therefore, it is not surprising that the agreement between ASA scores obtained by different physicians and between ASA scores obtained at different time points is only moderate.^(9,10)

Second, objective scores are easier to compare. All frequentist statistical analyses are based on the appropriate measurement of a relevant variable a certain number of times (and/or in a certain number of subjects) that is sufficient to obtain a certain level of significance. Measuring and pooling opinions is cumbersome, even for experienced social sciences experts, let alone for bedside physicians. Therefore, it is easy to understand that due to benchmarking and external validity reasons (among many other reasons), objective scores are frequently applied in anesthesiology and in critical care medicine.⁽¹¹⁾

Conflicts of interest: None.

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DOI: 10.5935/0103-507X.20150016

Nevertheless, there are advantages to including subjective measures in preoperative risk evaluations. Any score that incorporates any degree of subjectiveness may aid in communication and provide, in a certain sense, a measurable opinion of the attending physician. This cannot be determined by simple statistical analysis. When the anesthesiologist transfers a patient to the intensivist after major surgery, informing him/her of the patient's ASA score may help him/her to predict the course of the postoperative period, regardless of the number of comorbidities or any other variables measured in the intraoperative period. It may also help the intensivist understand how the anesthesiologist felt about the patient's condition. One may say that simply recording the ASA score in the pre-operative evaluation chart may be a form of emotional reporting, a measurement of "how well the anesthesiologist thinks things will go".⁽¹²⁾

This brings us to ask what we should currently expect from the ASA score. Moreno et al.,⁽¹³⁾ in this edition, used data from the EuSOS study to further evaluate the role of the ASA score in modern practice. It was a very timely analysis for which the authors should be commended. Reexamining the role of old practices and tools is an essential part of the necessary reinvention of clinical practice. The authors concluded that the discriminatory capability of the ASA score was low, which was interpreted as a lack of clinical relevance to the modern anesthesiology practice. It is not surprising that ASA 1 and 2 were grouped together in the same risk category after recursive partitioning. In the main EuSOS study, mortality was not significantly different for ASA 1 and 2.⁽¹⁴⁾ Additionally, some misclassification issues existed with the ASA score (as pointed by the authors in

the discussion). However, as shown in figure 2 and in the Kaplan Meier's plots, survival decreased when the ASA increased from 2 to 5. The association between ASA score and higher mortality was maintained in a multivariate analysis. This may suggest that the ASA score measures something that we cannot yet clearly define. Consequently, a relevant point that could not be assessed by the authors in the present analysis was whether the ASA score still provides any information that is not captured by other scores or other clinical prediction rules. It is also unclear if ASA performance would be better (or worse) in a specific subset of patients. Recursive partitioning was performed by the authors, but it only evaluated ASA score and did not account for other relevant variables or possible interactions. For example, ASA score might be less relevant for smaller procedures than for major abdominal or thoracic surgeries. Other interactions between outcome-associated variables may be expected, such as that between the anesthesiologist's experience and the ASA score.

Therefore, before we can conclusively state that the ASA score is outdated, we should address every possible scenario where the score could provide useful information. For example, many clinical symptoms and diagnostic procedures have low discriminative capability and are still applied regularly. The presence of rales has low reliability for the diagnosis of pneumonia, but auscultation for the identification of rales is still taught to medical students worldwide.⁽¹⁵⁾ Moreno's work highlights the importance of keeping a high level of suspicion regarding the validity of old practices.⁽¹³⁾ It may not be sufficient to deconstruct the role of a very old tool, but this is a move forward in the interpretation of the ASA score.

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