

Original Article

Palliative Sedation: Reliability and Validity of Sedation Scales

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Abstract

Context. Observer-based sedation scales have been used to provide a measurable estimate of the comfort of nonalert patients in palliative sedation. However, their usefulness and appropriateness in this setting has not been demonstrated.

Objectives. To study the reliability and validity of observer-based sedation scales in palliative sedation.

Methods. A prospective evaluation of 54 patients under intermittent or continuous sedation with four sedation scales was performed by 52 nurses. Included scales were the Minnesota Sedation Assessment Tool (MSAT), Richmond Agitation-Sedation Scale (RASS), Vancouver Interaction and Calmness Scale (VICS), and a sedation score proposed in the Guideline for Palliative Sedation of the Royal Dutch Medical Association (KNMG). Inter-rater reliability was tested with the intraclass correlation coefficient (ICC) and Cohen's kappa coefficient. Correlations between the scales using Spearman's rho tested concurrent validity. We also examined construct, discriminative, and evaluative validity. In addition, nurses completed a user-friendliness survey.

Results. Overall moderate to high inter-rater reliability was found for the VICS interaction subscale (ICC = 0.85), RASS (ICC = 0.73), and KNMG (ICC = 0.71). The largest correlation between scales was found for the RASS and KNMG ($\rho = 0.836$). All scales showed discriminative and evaluative validity, except for the MSAT motor subscale and VICS calmness subscale. Finally, the RASS was less time consuming, clearer, and easier to use than the MSAT and VICS.

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Conclusion. The RASS and KNMG scales stand as the most reliable and valid among the evaluated scales. In addition, the RASS was less time consuming, clearer, and easier to use than the MSAT and VICS. Further research is needed to evaluate the impact of the scales on better symptom control and patient comfort. *J Pain Symptom Manage* 2012;44:704–714. © 2012 U.S. Cancer Pain Relief Committee. Published by Elsevier Inc. All rights reserved.

Key Words

Scales, palliative sedation, monitoring, reliability, validity

Introduction

Near the end of life, patients who remain alert may present with physical and psychological symptoms despite adequate palliative care. In some of these cases, relief from suffering may be achieved only if alertness is lowered by means of palliative sedation. However, the treatment of prolonged suffering with sedatives is only acceptable after all other reasonable options have been considered. Moreover, patients receiving sedatives may recover alertness and present with symptoms if insufficient medication is provided. Alternatively, excessive sedatives may cause respiratory depression and lead to an accelerated death.¹ For palliative sedation to be proportional, monitoring the effects of sedatives would seem desirable.

Nonetheless, the “how” of monitoring palliative sedation is currently an open question.² The purpose of palliative sedation, whether continuous or intermittent, is to provide comfort to patients with unbearable suffering.^{3,4} As it is not possible to directly measure the comfort of nonalert patients, observer-based sedation scales have been used to provide a measurable estimate in palliative sedation.⁵ Examples include the Glasgow Coma Scale,^{2,6,7} Ramsay Sedation Scale,^{4,8} Visual Analogue Scale,^{4,9} and Richmond Agitation-Sedation Scale (RASS).⁴ The clinimetric properties of several of these scales have been evaluated in the intensive care unit (ICU) setting. However, their usefulness and appropriateness in palliative sedation has not been demonstrated. One study described the use of a scale in the broader spectrum of palliative care patients (sedated and nonsedated).⁶

The usefulness of measurement scales in health care is dependent on their reliability, that is, how reproducible their results are under different conditions. In addition, scales must be

valid, that is, measure what they are meant to measure.¹⁰ To our knowledge, no studies have described how sedation scales perform in terms of reliability and validity in the setting of palliative sedation. Therefore, we studied the performance of four observer-based sedation scales as a first step to address this issue.

The observer-based sedation scales developed for the ICU setting include a group that uses a single number to describe distinct behaviors and a group that comprises different subscales for the separate reporting of domains, such as the level of consciousness, agitation, interaction, and calmness. We included two scales from the latter group—the Minnesota Sedation Assessment Tool (MSAT) and the Vancouver Interaction and Calmness Scale (VICS)—and two single-number scales: the RASS and a sedation score proposed in the Guideline for Palliative Sedation of the Royal Dutch Medical Association (KNMG) (Fig. 1).^{5,11–13} Although different scales have been proposed for assessment of sedation, we arbitrarily chose to evaluate scales that were already validated in the most controlled environment, in this case the ICU setting, and compare these to a scale proposed for palliative sedation. Because palliative sedation is performed in a variety of settings (including the ICU), a secondary reason for choosing the observer-based scales already in use in the ICU setting was to facilitate acceptance of these instruments in case reliability and validity of these scales could be confirmed in a palliative care setting.

Methods

Scales

Four observer-based scales were used to monitor palliative sedation. Three of the sedation scales we tested (MSAT, VICS, and

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