of death rattle in the last days. A prospective, two-group observation study was conducted; patients who were near death were stratified into those with and without death rattle. The patients were observed, and death rattle and respiratory distress were simultaneously measured. There were no differences when patients with and without death rattle were compared.[2]

Two systematic reviews revealed that no medications or nonmedication treatments are superior to a placebo.[3,4] Furthermore, attempts to remove the secretions with suction resulted in patient discomfort.[5]

Thus, it remains clinically counterproductive to prescribe medications with limited or no effectiveness in the face of no patient distress. Although Mercadante's team found promise to the proactive administration of hyoscine butylbromide, this medication must be administered parenterally perhaps contributing to patient discomfort. Perhaps, our efforts should be directed to assuaging family members' and clinicians' distress at hearing death rattle, which does not entail medicating the patient, by normalizing the sounds of death rattle for those who hear it.[6]

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Author's Response

To the Editor:

The intriguing questions raised by Campbell deserve several comments:

1. Campbell et al.'s study[1] was cited to suggest that patients with death rattle (DR) do not exhibit distress, and it is true that, intuitively, one could argue that a patient with a significant reduction in the level of consciousness may not feel distress (who knows?). However, the study also shows an association between the entity of the DR and an objective (i.e., not reported by the patient) measure of respiratory distress (RDOS), which has been used in patients with different levels of consciousness. In patients who were capable of responding (22%), a correlation between RDOS and some objective measures (SO_2 and need for oxygen, but not hypercarbia), and intensity of dyspnea, was observed. The RDOS score was higher in patients with cognitive impairment or who were dying.[2] These data show the complexity of this situation.
2. It is important to consider the reason that studies have failed to find advantages with anticholinergics.[3] As described in the discussion of our trial, there is no drug able to remove what is already formed. The pragmatic study we performed was based on the observation of patients who are traditionally treated with drugs after DR occurs (like those reported in literature) and patients receiving the drug once the level of consciousness decreases to the point that protective reflexes are inefficient before the development of DR. Considering that DR will develop in a large number of patients, a preventative treatment could represent a new way to use old drugs, which were ineffective if used in a wrong way. Of interest, a large study was planned to confirm the observation reported in our study.[4]
3. We are aware of a retrospective report on the patient discomfort with suction of secretions,[5] but the outcome depends on how one proceeds. In a patient with a low level of consciousness, a small bolus of propofol or midazolam (if it is already used for palliative sedation), may avoid any discomfort for patient, even with laryngoscopy, and the risks of mucosal damage are minimal.[6] We agree that it will depend on the experience of the operator who performs the procedure, but at the same time, we think that skilled personnel should be available in any place where palliative care is provided.

4. We disagree that parenteral administration of a drug should be considered a discomfort. The last days of life are inevitably managed parenterally, as patients are unable to receive oral medications. We are unaware of a palliative sedation performed by oral route.
5. Although one could consider assuage the distress of people in the patient's environment by "normalizing" the sounds of DR, this is problematic. Regardless of what the patient feels (again, who knows?), it is our duty to make all our efforts, using available knowledge and experience, to provide a peaceful death. Merely observing that an unconscious patient seems not to suffer is not in line with the effort to ensure dignity in dying, which requires taking into consideration many aspects. In our opinion, the way a loved one dies leaves deep marks in the memories of the relatives and the relief of DR may be important for them. It may not be possible to experience the death of a patient with DR and consider this situation normal although palliative care physicians (or nurses) are expert in communication.

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Letter to the Editor Re: "Hyoscine Butylbromide for the Management of Death Rattle: Sooner Rather Than Later"

To the Editor

Response to "Hyoscine butylbromide for the management of death rattle: sooner rather than later"

We have read with interest the paper by Mercadante et al.[1] and congratulate the authors on completing this work in a group notoriously hard to study. Although the outcomes of the study at face value support the regular use of anticholinergics to reduce the phenomena of noisy secretions, we believe the routine use of medications is not supported within the available evidence.

One of the most important findings of this paper is that not all the patients in the usual care arm developed noisy respirations. This was noted by the authors, and we raise it again as this means it is highly likely that a proportion of patients in the study's intervention arm received medications unnecessarily and, as a result, were exposed to unwarranted harms. Although it is impossible to understand how dying patients experience the unpleasant side effects of anticholinergic medications, data from the frail elderly suggest that their experiences with these medications may be unpleasant.[2] We do not have any way of understanding for this treated group what the risk-benefit ratio or net effect actually was.

The research must be placed in a broader context. Existing evidence supports that patients themselves are not bothered by the phenomena of sections.[3] In addition, the authors correctly pointed out that there are high-level systemic review data that outline that, to date, the only real evidence to manage secretions lies with education and support to family members.[4]

Our own clinical practice supports the benefits of talking with families and supporting nursing staff. As part of our role in providing consultative palliative care within the inpatient setting in a tertiary referral teaching hospital, we have recently introduced an approach to caring for the dying. Included in this package is support and education to the nursing staff that outlines the fact that not all patients will develop noisy breathing but if they do, this is likely to be more distressing to families and staff. We routinely use the analogy of the snoring where the snorer is not usually bothered but those around them are. In the 12-month that this project has been running, as illustrated in Figure 1 below, the prescription of glycopyrrolate has declined. Although glycopyrrolate is commonly used in the peroperative phase in operating theatres, it is also one of the most commonly recommended