



Assuaging listener distress from patient death rattle

Margaret L. Campbell

Wayne State University, Michigan, USA

Correspondence to: Margaret L. Campbell, PhD, RN, FPCN. Wayne State University, College of Nursing, 5557 Cass Ave., #344, Detroit, MI 48202, USA. Email: m.campbell@wayne.edu.

Submitted Jul 31, 2018. Accepted for publication Sep 06, 2018.

doi: 10.21037/apm.2018.09.03

View this article at: <http://dx.doi.org/10.21037/apm.2018.09.03>

Death rattle is a naturally occurring patient condition during the last hours of life developing in about 45% of patients (1,2). The term is applied to the noisy secretions that are audible and can be distressing for listeners from both professional caregivers and families of dying patients (3-5). A death rattle is produced when the patient is near death and is too weak or hypersomnolent to clear or swallow pharyngeal secretions; even small volumes of secretions will produce sounds in the resonant pharyngeal space. Death rattle usually becomes audible 24 to 48 hours before death (6,7).

Reducing the distress among listeners has been conventionally treated through attempts to reduce or eliminate patient noise. Patient treatment to reduce death rattle primarily consists of topical, oral, or parenteral anti-cholinergic/anti-secretory medications that have often been associated with adverse effects including dry mouth, urinary retention, visual disturbance, and confusion (8). Ironically, patients with a high anti-cholinergic drug load from prescribed medications were more likely to develop death rattle as identified in retrospective data (9). Attempts to remove the secretions by suctioning leads to adverse patient outcomes including discomfort, bleeding, and vomiting (10). Two systematic reviews concluded that no medications or non-medication treatments are superior to placebo (8,11). However, postural drainage through patient repositioning is basic and largely without adverse patient outcomes.

The general belief among health care professionals is that patients with death rattle are not experiencing distress. Conventional treatments are generally undertaken to appease family and staff but these treatments may be more burdensome than beneficial to the patient; to date there have been no attempts to understand prescribing practices. Further, non-beneficial treatments adversely

increase the cost of care.

While the efficacy of treatments for death rattle remains under investigation, the effect on the patient has only been studied in one prospective investigation (1). A prospective, 2-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 measured.

Terminally ill adult patients were included if they had a Palliative Performance Scale (PPS) score =10 signifying near death (12). Patients were excluded from the study if they had an artificial airway (tracheostomy or endotracheal tube) or if their clinical condition caused a secondary source of death rattle, identified as “pseudo-death rattle” (6) such as fulminant pneumonia, sinusitis, tracheitis, food and/or fluid aspiration, pharyngeal or pulmonary hemorrhage, and pulmonary edema associated with heart failure. Likewise, patients were excluded if they had a confounding etiology for risk of respiratory distress such as stridor or severe hypoxemia (peripheral oxygen saturation $\leq 85\%$).

Daily screening rounds were made at each of the study sites. The patient was observed for scoring of the Death Rattle Intensity Scale (DRIS) (13) followed immediately by scoring the Respiratory Distress Observation Scale (RDOS) (14). Data were collected daily until patient death or facility discharge. There were no differences in respiratory distress (RDOS) when patients with (n=32) and without (n=39) death rattle were compared (t=1.48, P=0.143) as hypothesized. Death rattle intensity and respiratory distress were not correlated (r=-0.13, P=0.477) (1).

This was the first study to determine in a systematic fashion whether respiratory distress is associated with death rattle. As predicted, this naturally occurring

noisy sound at the end of life is not indicative of patient distress. It is, in fact, a signifier of impending death when there is an associated diminished consciousness such that normally swallowed or cleared secretions are retained in the pharynx. Sometimes, these noisy sounds become quite loud, paralleling the variance in other airway noises such as snoring. For example, snoring can be very subtle or loud enough to be heard at some distance from the sleeper.

It remains clinically counter-productive to prescribe medications with limited or no effectiveness in the face of no patient distress. Most of the medications routinely used to control pharyngeal secretions are anti-cholinergics that can induce urinary retention, dry mouth and confusion, although we cannot be certain that the patient is able to experience them. Thus, with palliative care goals to minimize patient burden or harm it stands to reason that medications and other interventions such as suctioning with adverse effects and limited utility should be withheld. A better avenue to assuage family members' and clinicians' distress at hearing death rattle that does not entail medicating the patient is to normalize the sounds of death rattle for those who hear it.

Changing routine practice entails a number of processes well-described in evidence-based practice resources (15). Novice clinicians new to the care of dying patients must have an evidence-based orientation. Thus, it is incumbent on educators to stay abreast of research findings that inform practice. The adage "we've always done (it) this way" has no place in an evidence-based clinical setting. The clinician who understands that death rattle does not require suctioning or medication will be equipped to help the family understand the noise and its significance.

Analogies are helpful to explain an unfamiliar phenomenon. Death rattle can be likened to snoring which is a common, familiar sound. Since the small amounts of secretions make noise in the resonant tube (airway) another analogy is to compare the sound of death rattle to the noise made when chasing the last bit of liquid from the bottom of a glass with a straw.

Summary

Clinicians armed with evidence about no distress from death rattle can inform the patient's family and clinical peers that death rattle is a naturally occurring, non-distressing phenomenon at the end of life, one that warrants no medical treatment.

Acknowledgements

None.

Footnote

Conflicts of Interest: The author has no conflicts of interest to declare.

References

1. Campbell ML, Yarandi HN. Death rattle is not associated with patient respiratory distress: is pharmacologic treatment indicated? *J Palliat Med* 2013;16:1255-9.
2. Heisler M, Hamilton G, Abbott A, et al. Randomized double-blind trial of sublingual atropine vs. placebo for the management of death rattle. *J Pain Symptom Manage* 2013;45:14-22.
3. Wee B, Coleman P, Hillier R, et al. Death rattle: its impact on staff and volunteers in palliative care. *Palliat Med* 2008;22:173-6.
4. Wee BL, Coleman PG, Hillier R, et al. The sound of death rattle II: how do relatives interpret the sound? *Palliat Med* 2006;20:177-81.
5. Wee BL, Coleman PG, Hillier R, et al. The sound of death rattle I: are relatives distressed by hearing this sound? *Palliat Med* 2006;20:171-5.
6. Wildiers H, Dhaenekint C, Demeulenaere P, et al. Atropine, hyoscine butylbromide, or scopolamine are equally effective for the treatment of death rattle in terminal care. *J Pain Symptom Manage* 2009;38:124-33.
7. Wildiers H, Menten J. Death rattle: prevalence, prevention and treatment. *J Pain Symptom Manage* 2002;23:310-7.
8. Wee B, Hillier R. Interventions for noisy breathing in patients near to death. *Cochrane Database Syst Rev* 2008:CD005177.
9. Sheehan C, Clark K, Lam L, et al. A retrospective analysis of primary diagnosis, comorbidities, anticholinergic load, and other factors on treatment for noisy respiratory secretions at the end of life. *J Palliat Med* 2011;14:1211-6.
10. Watanabe H, Taniguchi A, Yamamoto C, et al. Adverse Events Caused by Aspiration Implemented for Death Rattle in Patients in the Terminal Stage of Cancer: A Retrospective Observational Study. *J Pain Symptom Manage* 2018;56:e6-8.
11. Kolb H, Snowden A, Stevens E. Systematic review and narrative summary: Treatments for and risk factors associated with respiratory tract secretions (death rattle) in

- the dying adult. *J Adv Nurs* 2018;74:1446-62.
12. Weng LC, Huang HL, Wilkie D, et al. Predicting survival with the Palliative Performance Scale in a minority-serving hospice and palliative care program. *Journal of Pain and Symptom Management* 2009;37:642-8.
 13. Back IN, Jenkins K, Blower A, et al. A study comparing hyoscine hydrobromide and glycopyrrolate in the treatment of death rattle. *Palliat Med* 2001;15:329-36.
 14. Campbell ML, Templin T, Walch J. A Respiratory Distress Observation Scale for patients unable to self-report dyspnea. *J Palliat Med* 2010;13:285-90.
 15. Melnyk BM, Fineout-Overholt E. Evidence-based practice in nursing and healthcare. 2nd ed. Philadelphia: Wolters Kluwer/Lippincott Williams and Wilkins; 2011.

Cite this article as: Campbell ML. Assuaging listener distress from patient death rattle. *Ann Palliat Med* 2019;8(Suppl 1):S58-S60. doi: 10.21037/apm.2018.09.03