

Clinical Resource Guide: Terminal Secretions

INTRODUCTION TO TERMINAL SECRETIONS

As the dying process progresses, patients may lose their ability to swallow oral secretions. The “death rattle,” a gurgling sound, occurs due to air moving through a buildup of saliva and mucus in the throat and airways. Studies have reported varying prevalence rates, with a weighted mean of 35%. While often distressing to family members and caregivers, The American College of Chest Physicians and the medical literature emphasize that secretions are unlikely to cause distress or discomfort to patients. Antimuscarinic agents like atropine and scopolamine are often tried, however **the use of pharmacologic agents for terminal respiratory secretions is not supported by robust evidence** and should be carefully considered due to the potential for adverse effects. This guide will empower hospice care teams to build a successful strategy for addressing terminal secretions.

Pharmacist Corner Objectives

- 1.) Identify factors contributing to terminal secretions
- 2.) Evaluate efficacy, adverse effects, and cost of common pharmacologic interventions
- 3.) Develop a non-pharmacologic treatment plan which empowers caregivers and optimizes patient comfort

CONTRIBUTING FACTORS

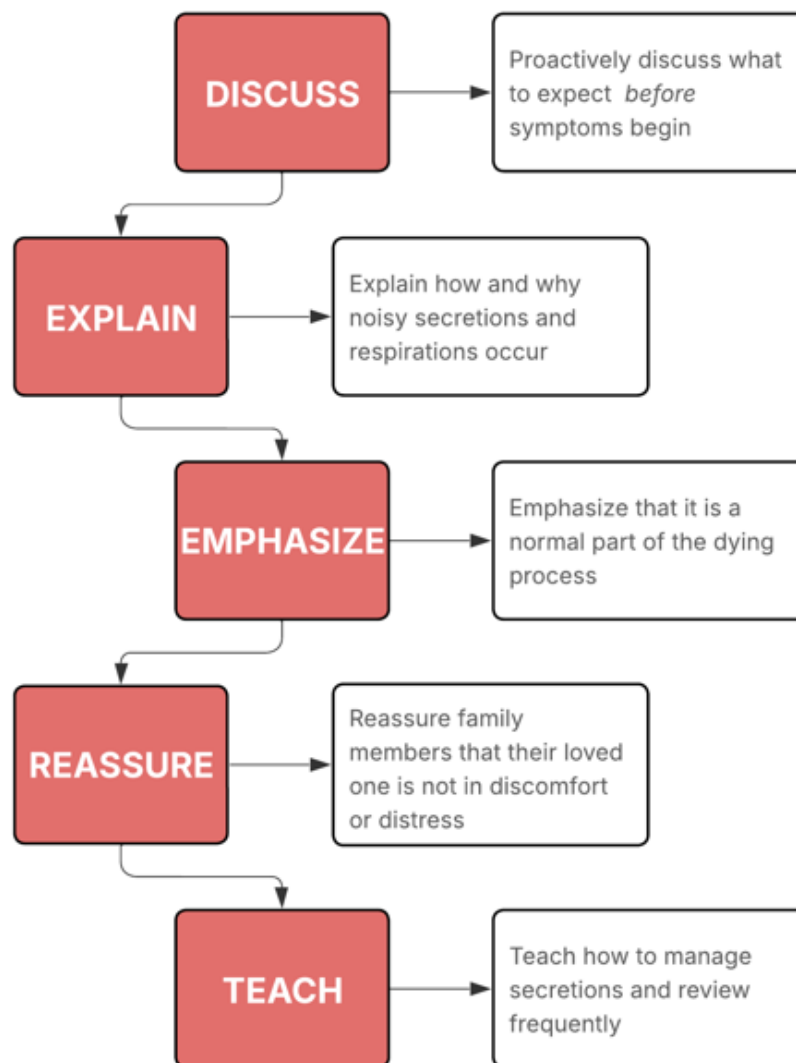
Various factors may contribute to the development of terminal secretions including:

- Impaired swallowing from reduced level of consciousness
- Neuromuscular dysfunction (brain injuries, ALS)
- Medications (antipsychotics, pilocarpine, clozapine, benzodiazepines, carbidopa-levodopa, rivastigmine, ropinirole, bethanechol)
- GERD, URI, fluid overload and edema

NON-PHARMACOLOGIC MANAGEMENT

Since the underlying issue is impaired clearance rather than overproduction of saliva, reposition the patient by gently turning onto their side and adjust every few hours if possible. This can help secretions drain naturally, thereby reducing the sound of the rattle. Elevate the head slightly to assist clearing the airways. For some patients, reducing fluid intake (if appropriate) may help minimize the production of saliva and mucus. In some cases, gentle suctioning can be used to remove excess secretions. This should be done sparingly, as it may cause discomfort or even stimulate more secretion production. Gentle swabbing of the mouth with a moist oral swab can aid in reducing pooling of saliva.

FAMILY AND CAREGIVER EDUCATION



PHARMACOLOGIC MANAGEMENT

Medication	Usual Adult Dose	Common Side Effects
Atropine 1% Ophthalmic Solution	2 drops SL every 4 hours as needed	Agitation, confusion, dizziness, headache, changes in heart rate, hallucinations, urinary retention, blurred vision, constipation, sedation
Hyoscyamine	0.125mg sublingually every 4 hours as needed	
Glycopyrrolate	0.2-0.4mg SQ every 4 hours as needed (poor absorption limits PO use)	
Scopolamine Transdermal Patch	1 patch every 72 hours (slow onset of action; typically 12-24 hours)	

EFFICACY

Evidence shows anticholinergic medications provide limited and inconsistent benefit over placebo for terminal secretions. **There is no evidence that these medications improve patient comfort, survival, or quality of life.** Additionally, there is no clear evidence that any one agent is superior to another. If the decision is made to administer medication, timing is important. They primarily act to prevent new secretions from forming, so it is often recommended to administer antimuscarinic medications as soon as the death rattle begins. Medications will not address the root cause which is impaired clearance of secretions.

SUMMARY

As death approaches, there is a progressive weakening of the swallowing reflex and secretions tend to pool in the upper airways leading to noisy respirations. While unnerving to caregivers and family members, there is no evidence that patients experience discomfort as a result of terminal secretions. Pharmacologic interventions have shown little benefit. Anticipatory guidance, reassurance, and education for families on what to expect before symptoms occur is a crucial component of successful management.

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