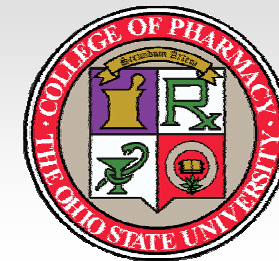


Evaluation of the Use of Atropine 1% Ophthalmic Solution Administered Sublingually for the Management of Terminal Respiratory Secretions

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Background

Terminal respiratory secretions (TRS) or “death rattle” is a relatively common symptom in the dying patient. As the patient loses the ability to swallow or becomes too weak to expectorate, the movement of air during respiration through mucous accumulated in the pharynx and trachea creates an audible gurgling. Evidence is inconclusive as to whether or not the presence of noisy respiratory secretions is distressing to the patient. However, the gurgling or rattling sound can be distressing to the patient’s family, caregivers, and visitors. Current standard of care for the prevention and treatment of terminal respiratory secretions involves the use of anticholinergic drugs.

- TRS incidence: 25% up to 92%

Table 1. Medications commonly used to treat TRS

Generic (Brand)	Suggested Initial dose	Dose range	Dosage form	Avg Retail Cost
Atropine (Isopto Atropine)	1 gtt SL (approx 0.5mg)	Range not yet established	1% ophthalmic solution	5ml, \$20.49 B 5ml, \$8.99 G
Atropine (Sal-tropine)	0.4mg PO	Range not yet established	0.4mg tabs	30 tabs, \$12.78 B
Glycopyrrolate (Robinul)	1mg PO 0.2mg SC	1-2mg TID 0.2mg SC Q4-6H	1 mg tabs 0.2mg/ml SFI	90 tabs, \$148.07 B 90 tabs, \$85.99 G
Hyoscyamine (Levsin)	0.125mg PO 0.125mg SL	0.125mg-0.25mg PO or SL Q4-6H	0.125mg/ml solution 0.125mg tabs	15ml, \$38.90 B 90 tabs, \$69.67 B 60 tabs, \$9.99 G
Scopolamine (Transderm Scop)	1 patch Q 72H	1-3 patches behind ear	1.5mg patch	4 patches, \$30.58 B

Why investigate atropine 1% ophthalmic drops administered sublingually?

- Small volume to administer
- Commercially available preparation
- Ease of administration
- Easy titration of dose to effect
- Cost-effective

Objective

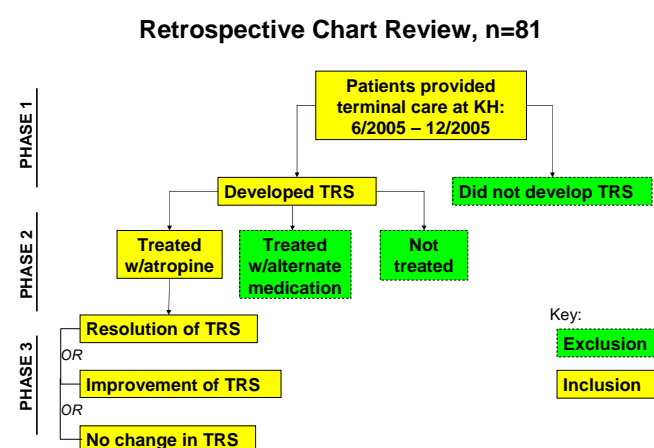
To review and evaluate the sublingual administration of atropine 1% ophthalmic solution for the management of terminal respiratory secretions at an inpatient hospice unit.

Methods

This study has been exempted from review by the Institutional Review Board of Riverside Methodist Hospital (OhioHealth). All data collected will be recorded without patient identifiers to maintain confidentiality.

HomeReach Hospice at Kobacker House routine admission orders for TRS:

Atropine 1% ophthalmic solution (0.5mg/gtt)
2 gtt Q 2 hours PRN terminal secretions



Main outcome measure:

- Reduction or resolution of TRS

Secondary outcome measures:

- Heart rate
- Level of restlessness
- Respiratory rate

Results

Table 2. Study demographics (n=81)

Characteristic	Number (%)
Gender (M/F)	47 (58%) / 34 (42%)
Age (yr)	Avg 66.9, (32 - 90)
30-39	2 (2%)
40-49	9 (11)
50-59	13 (16)
60-69	14 (17)
70-79	28 (35)
80-89	13 (16)
Over 90	2 (2)
Hospice Diagnosis	
Cancer – all primaries	67 (83%)
Debility – all cause	5 (6)
Heart Disease	5 (6)
Renal Failure	2 (2)
Liver Failure	1 (1)
COPD	1 (1)

- 22 of 81 patients developed TRS
- 16 of 22 were treated with atropine
- 6 of 22 were treated with alternate medication

• 15 of 16 patients had a reduction or a resolution of TRS

- Total atropine administered, avg 2 mg (range: 1 mg – 5 mg)
- Length of time between doses, avg 6.8 hours (range: 2 hours – 44 hours)

Table 3. Pts Treated with Atropine (n=16)

No. of Patients	No. of Doses	TRS Onset to Death, Avg (hours)
6	1	28 (6 – 84)
5	2	17 (6 – 30)
4	3	23 (12 – 48)
1	5	36

- No changes in HR, RR or level of restlessness of patient documented by nursing staff during treatment of TRS with atropine.

Conclusions

- TRS symptom improved in all but 1 patient given atropine.
- Adverse effects on heart rate, respiratory rate or level of restlessness were not observed in this study.
- Atropine 1% ophthalmic solution is a reasonable option for management of TRS.

References

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Disclosure

The authors of this presentation have nothing to disclose.