Oropharyngeal Dysphagia in Patients with COPD: A Systematic Review

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Swallowing Background

- 18 million adults in the U.S. have dysphagia\(^1\)
- Swallowing problems can lead to:
  - Malnutrition
  - Aspiration
  - Aspiration pneumonia/pulmonary infection\(^2\)
- Speech-Language Pathologists diagnose and treat patients with oropharyngeal dysphagia
The World Health Organization predicts COPD will be the 3\textsuperscript{rd} most common diagnosis in the world and 5\textsuperscript{th} most disabling by 2020\textsuperscript{3}

COPD encompasses:
- Chronic bronchitis
- Emphysema
- Airway obstruction\textsuperscript{4}

Coughing, choking, and shortness of breath are common effects of COPD that inhibit daily life
Background

- Patients with respiratory disorders will often exhibit disorders of swallowing
- What do we know about swallowing disorders in patients with respiratory compromise?
Relationship between breathing and swallowing\textsuperscript{5,6}

- Anatomical: brainstem
- Anatomical: similar structures used for both upper airway maintenance and swallowing
- Physiological: swallowing interrupts the cycle of respiration

Should disordered respiration lead to disordered swallowing?
Systematic Review

- Conduct a systematic review of the literature that documents swallowing disorders in patients with COPD.
- A systematic review: a review that aims to evaluate all evidence pertaining to a certain question and then draw a conclusion from that review.
Methodology

The questions:

- Is there evidence that patients with COPD have oropharyngeal dysphagia?
  - Are there any incidence/prevalence data?
  - What are the characteristics of those affected, not affected?
  - Is there evidence that treating COPD might improve/prevent oropharyngeal dysphagia?
Methodology

- Search for articles (1990-2008)
  - Using the Medline, ComDis Dome, and Cochrane Library databases:
    - Respiratory disorders, swallowing disorders, COPD, dysphagia, deglutition, GERD, complications, oxygen saturation, meals.
    - No exclusionary criteria
  - Found abstracts and requested articles
    - Also checked all references for possible articles
  - Read articles and determine their strength of evidence using methodological quality analysis.²
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Results

- Is there evidence that patients with COPD have oropharyngeal dysphagia?
  - Yes, there are studies that show a relationship.
Results

- Studies on COPD and oropharyngeal dysphagia:
  - 49 studies reviewed
  - 7 found on COPD and oropharyngeal dysphagia.
  - Levels of Evidence:
    - 0-A, 3-B, 3-C, 1-D
  - 209 patients with COPD, 41 healthy controls in total were tested between all 7 studies.\(^4,9-14\)
    - 5 studies reported that at least 80% of patients with COPD showed to have swallowing dysfunction
Results

- **Incidence/prevalence data?**
  - No studies documented the incidence or prevalence of oropharyngeal dysphagia in patients with COPD.

- **What are the characteristics of those not affected compared to those affected?**
  - No studies were found

- **Does treatment of COPD improve/prevent oropharyngeal dysphagia?**
  - No studies were found
Conclusions

- There is limited evidence that documents the relationship between oropharyngeal dysphagia and COPD.
- Of the evidence available, none is at Level A
Future Work

- Recommend conducting future studies on this population
  - Incidence/prevalence data
  - Comparison of groups with/without dysphagia and COPD
  - Does medical treatment of COPD have an impact on dysphagia?
  - Does dysphagia impact COPD?

- If we can improve respiratory function with exercise, will that positively impact the patient with COPD who is at risk for dysphagia?
References

4 Good-Fratturelli, Curlee RF, and Holle JL. Prevalence and nature of dysphagia in VA patients with COPD referred for videofluoroscopic swallow examination. J. Commun Disord 2000; 33:93-110
7 Carnaby-Mann, GD and Crary, MA. Examining the evidence on neuromuscular electrical stimulation for swallowing. Arch Otolaryngol Head Neck Surg 2007; 133:564-571
8 Oxford Centre for Evidence-Based Medicine Levels of Evidence(2001) www.cebm.net
11 Coelho C. Preliminary findings on the nature of dysphagia in patients with COPD. Dysphagia 1987; 2:28-31