Anticholinergic Use is a Major Risk Factor For Chronic Laryngitis

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INTRODUCTION

- 45% of chronically hoarse patients do not have LPR
- Parasympathetic fibers outnumber sympathetic by 20:1 within the larynx
- There is a pathologic mechanism: the larynx is a mucosal and functional extension of the oral cavity and oropharynx; the most common cause of xerostomia is anticholinergic medication use and polypharmacy.
- No studies have as yet evaluated the association between chronic laryngitis and anticholinergic use.

METHODS AND MATERIALS

- Case-control study
- All subjects completed the Reflux Symptom Index, while the symptom of hoarseness alone was used as the primary determinant of chronic laryngitis (a score of 3 or greater)
- Exclusion criteria: subjects with structural abnormalities such as papillomatosis, nodules, granulomas or subglottic stenosis that may be causing chronic irritation, known persistent reflux, professional voice overuse, current smoking status, prior neck radiation, Sjogren’s syndrome, recent laryngeal surgery or injection within the past month, or tracheostomy dependency
- Laryngitis scores were then compared with subjects’ medication lists, age, and gender, and analyzed using logistic regression via Odds Ratios (OR). The confidence coefficient was set at 1.96 for a 95% Confidence Interval

RESULTS

- Any subject taking at least one anticholinergic medication had a 2.86 increased odds (CI 1.58-5.15) of experiencing chronic laryngitis. If a subject was taking 2 or more anticholinergic medications, those odds jumped to 4.99 (CI 2.21-11.23)
- A subject taking 5 or more medications had a 1.90 increased odds of having chronic laryngitis (CI 1.04-3.46)
- Females had a 2.04 increased odds (CI 1.12-3.69) of having chronic laryngitis when compared to males
- Older age by itself is not associated with an increased likelihood of having chronic laryngitis (OR 0.90, CI 0.50-1.62). However, age above 65 was associated with higher hoarseness scores when a subject was taking at least 1 anticholinergic medication (OR 2.62)

CONCLUSIONS

- The odds of having chronic laryngitis when taking a single anticholinergic medication was nearly 3 times that of a subject taking no anticholinergic drug. These odds jumped to nearly 5 when a subject was taking 2 anticholinergic drugs, suggesting an additive effect.
- We also found a strong and significant association of chronic laryngitis with both polypharmacy and female gender. These results are consistent with the xerostomia literature, suggesting a similar pathologic mechanism.
- In assessing chronic laryngitis, we based our primary endpoint of laryngitis off of a simple hoarseness scale – the most common symptom of the disease. We reduced confounding by excluding all subjects with a known or probable cause of laryngitis.
- Because there is currently no validated index for assessing all-cause laryngitis, we also used the RSI as a secondary analysis for laryngitis, while excluding subjects with significant symptoms of esophageal reflux.
- We found that both of these methods of categorizing chronic laryngitis produced similar ORs when evaluating for anticholinergic use, age, gender, and polypharmacy.

REFERENCES