INTRODUCTION

- The US Census Bureau estimated that the elderly population (age over 65) numbered 47.7 million in 2017.1
- The number of Americans over 65 is projected to expand to over 70 million by 2030 (~20% of the US population).
- One in three Americans will experience a voice problem in their lifetime.2
- The prevalence of voice-related disorders appears to be higher amongst the elderly (10-47%).3
- The rate for referrals for this cohort is accelerating in line with the demographic shift.4

AIMS:
- Describe symptoms and etiologies of dysphonia amongst elderly patients.
- Examine treatment outcomes for surgical, medical, and voice therapy using the Voice Handicap Index (VHI).

RESULTS

Demographics (Table 1)

- A total of 242 patients over age 65 were included in this retrospective review.
- The mean (SD) age of this patient cohort was 73.6 (±6.24) years.

<table>
<thead>
<tr>
<th>Age Group</th>
<th>65-69 yr</th>
<th>70-74 yr</th>
<th>75-79 yr</th>
<th>&gt;80 yr</th>
<th>Total (N=242)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>28 (35.4%)</td>
<td>33 (41.1%)</td>
<td>10 (12.4%)</td>
<td>17 (21.3%)</td>
<td>88 (36.3%)</td>
<td>0.947</td>
</tr>
<tr>
<td>Female</td>
<td>51 (64.6%)</td>
<td>44 (55.9%)</td>
<td>29 (37.6%)</td>
<td>31 (39.7%)</td>
<td>155 (63.7%)</td>
<td></td>
</tr>
<tr>
<td>Race, No. (%)</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Caucasian</td>
<td>67 (84.6%)</td>
<td>55 (67.2%)</td>
<td>46 (59.4%)</td>
<td>42 (52.9%)</td>
<td>210 (86.8%)</td>
<td>0.284</td>
</tr>
<tr>
<td>African American</td>
<td>7 (9.0%)</td>
<td>10 (12.4%)</td>
<td>2 (2.6%)</td>
<td>4 (5.0%)</td>
<td>23 (9.5%)</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>8 (10.3%)</td>
<td>2 (2.5%)</td>
<td>2 (2.6%)</td>
<td>2 (2.6%)</td>
<td>14 (5.8%)</td>
<td></td>
</tr>
<tr>
<td>Insurance, No. (%)</td>
<td></td>
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</tr>
<tr>
<td>Medicare</td>
<td>47 (63.5%)</td>
<td>36 (44.0%)</td>
<td>28 (35.4%)</td>
<td>26 (32.5%)</td>
<td>137 (56.5%)</td>
<td>0.997</td>
</tr>
<tr>
<td>Commercial</td>
<td>18 (22.5%)</td>
<td>7 (8.6%)</td>
<td>10 (12.9%)</td>
<td>8 (10.0%)</td>
<td>43 (17.8%)</td>
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<tr>
<td>Other</td>
<td>14 (17.5%)</td>
<td>14 (17.5%)</td>
<td>9 (11.6%)</td>
<td>9 (11.6%)</td>
<td>46 (19.0%)</td>
<td></td>
</tr>
<tr>
<td>Referral Source, No. (%)</td>
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<td></td>
<td></td>
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<tr>
<td>Self</td>
<td>23 (29.3%)</td>
<td>20 (25.0%)</td>
<td>18 (22.9%)</td>
<td>13 (15.9%)</td>
<td>71 (29.3%)</td>
<td>0.934</td>
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<tr>
<td>PCP</td>
<td>26 (32.9%)</td>
<td>21 (26.0%)</td>
<td>16 (20.3%)</td>
<td>11 (13.6%)</td>
<td>74 (30.6%)</td>
<td></td>
</tr>
<tr>
<td>Otolaryngology</td>
<td>12 (15.2%)</td>
<td>10 (12.5%)</td>
<td>7 (8.7%)</td>
<td>7 (8.7%)</td>
<td>37 (15.6%)</td>
<td></td>
</tr>
</tbody>
</table>

Table 1: Demographic Data. PCP=Primary Care Provider

Prior diagnosis and management
- Laryngopharyngeal reflux disease (LPRD) was the most common diagnosis prior to referral (32.8%) (N=79).
- 17.4% (N=4) of patients were prescribed proton pump inhibitors (PPI) prior to referral.
- Patients were more likely to have been previously treated for reflux if they were younger (p=0.023) self-referral (p=0.027), had classic reflux/GERD symptoms (p<0.000) or referred by PCP (p=0.037). This significance was lost when patients were referred by an otolaryngologist (p=0.353).

CONCLUSION

- Elderly patients with dysphonia are an expanding population group that differ from the general adult population.
- Empiric treatment with PPI for presumptive diagnosis of LPR continues to be high in elderly patients, despite recommendations in clinical practice guidelines.
- In our patient cohort, atrophy and paralytic/parasis groups were the most common etiologies of dysphonia.
- The surgical intervention group showed a clinically significant improvement in VHI scores. Voice therapy and medical management did not result in a clinically significant improvement in voice.

REFERENCES