Abstract

GERD has long been recognized as a cause of chronic cough, especially in non-smokers with a normal chest radiograph. The exact incidence is not known and estimates of GERIC among pulmonologists vary widely ranging from 0 to 40%.

To our knowledge, no studies on GERD have been done in Singapore and hence our main objective was to examine the local population.

Methods and Materials

The study was done in Changi General Hospital, which is a 1000 bedded teaching hospital in Singapore. Chart review of prospectively identified cases of chronic cough referred to the clinics of 2 respiratory physicians during the period March 1, 2010 to June 30, 2016 was performed. GERIC was defined as chronic cough with at least one of 3 classical GERD symptoms (heartburn, acid brash, frequent burping caused by excess ‘wind’ in the stomach).

Although experts like to subclassify non-acute cough into subacute (3-8 weeks) and chronic (> 8 weeks), for the purpose of this study, we used “Chronic” to include any cough ≥ 3 weeks. Exclusion criteria were 1) age < 21 years 2) Prisoners 3) pregnant women. We classified GERIC patients into 2 groups:

1. Likely – where the likelihood of GERIC is high. These patients had resolution of symptoms after GERD therapy
2. Possible – there is uncertainty about whether GERIC is the cause of cough. This included patients who: a) defaulted follow-up visits before diagnostic testing was completed b) were non-compliant to treatment c) failed treatment d) had other conditions that could also cause chronic cough (like asthma, upper airway cough syndrome, smoking).

We examined the demographics and clinical characteristics of these patients.

Table 1. All GERIC = 42 patients

<table>
<thead>
<tr>
<th>Gender</th>
<th>Age (years)</th>
<th>Race</th>
<th>Symptom duration</th>
<th>Timing of cough</th>
<th>Throat signs or symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males 13</td>
<td>Median 55.5</td>
<td>Chinese 28</td>
<td>10 weeks</td>
<td>Anytime 18</td>
<td>30 patients</td>
</tr>
<tr>
<td>Females 29</td>
<td>Range 21 to 79</td>
<td>Malay 7, Indian 4</td>
<td>Range 4 weeks to 30 years</td>
<td>Night 17</td>
<td></td>
</tr>
</tbody>
</table>

Discussion

GERIC was not an easy entity to diagnose or treat. Literature suggests that probably the patients most likely to respond to Proton pump inhibitors are those with classical esophageal symptoms.1 In our study done on a large cohort of patients referred for chronic cough, GERIC was not seen as a common cause. For obvious reasons, the most valuable information on GERIC can be gleaned from the “Likely” group.

GERIC was not common in our study. We think our study reflects ‘real life’ practice and illustrates the problems faced by pulmonologists when dealing with this difficult clinical entity.

Conclusion

GERIC was not common in our study. We think our study reflects ‘real life’ practice and illustrates the problems faced by pulmonologists when dealing with this difficult clinical entity.

Table 2. Likely GERIC = 13 patients

<table>
<thead>
<tr>
<th>Gender</th>
<th>Age (years)</th>
<th>Race</th>
<th>Duration of symptoms</th>
<th>Duration of initial therapy (in weeks)</th>
<th>Timing of cough</th>
<th>Throat signs or symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males 4</td>
<td>Median 49 (IQR 45-50)</td>
<td>Chinese 8, Malay 2</td>
<td>Median 1 year</td>
<td>Median 5.5</td>
<td>Anytime 5</td>
<td>7</td>
</tr>
<tr>
<td>Females 9</td>
<td>Range 24 to 69</td>
<td>Indian 1, Others 2</td>
<td>Range 4 to 15 weeks</td>
<td>Range 13</td>
<td>Night 4</td>
<td>Daytime 4</td>
</tr>
</tbody>
</table>

References

2. Kavitha R. Chronic cough due to Gastroesophageal Reflux in Adults. Chest 2016; 150(3):1341-1360

Purpose: GERIC-induced cough (GERIC) has been reported in Western studies as a common cause of chronic cough. We examined the prevalence and clinical characteristics of GERIC in patients referred to a specialist clinic in Singapore.

Methods:

A chart review of prospectively identified patients referred to the pulmonary clinic for evaluation of chronic cough. Of a total of 1969 referred patients, 1000 were referred to the clinic. Of these, GERIC was diagnosed in patients with chronic cough ≥ 3 weeks AND b) presence of ≥ one classical symptom of GERD (heartburn, acid regurgitation, excessive burping) after exclusion of other etiologies for chronic cough. Patients with a negative endoscopy, since there is no strong evidence to support the theory that such reflux is more seen in patients with chronic cough.

Of the 330 patients referred for cough over a 6 year period, GERC was diagnosed in 42 patients (13%). Most (69%) were women with a median age of 53 years. The median duration of cough was 26 weeks. 41 patients received a combination of PPI and Domperidone and the one patient got PPI alone. The rationale for adding a promotility agent like Domperidone was to treat any Non-acid reflux. The median duration of initial therapy was 5.5 weeks (range 4 to 9 weeks). PPI was prescribed as high dose Omeprazole 40 mg BD. Domperidone was used in varying doses (10-20 mg tabs) for varying periods (2 to 6 weeks).

Seventy one percent of patients had associated throat symptoms or signs (itchy throat, globus, constant throat clearing, “cobblestoned” appearance of the pharynx) were seen in 11% of patients.

Thirteen patients were in the “Likely” group and 29 in the “Possible” group. Throat symptoms (throat itchiness, globus, constant throat clearing, “cobblestoned” appearance of the pharynx). These were seen in 71% of patients.

We did not include patients diagnosed with Laryngopharyngeal reflux by endoscopy, since there is no strong evidence to support the theory that such reflux is more seen in patients with chronic cough.

GERIC was not seen as a common cause. For obvious reasons, the most valuable information on GERIC can be gleaned from the “Likely” group.

GERIC does not seem to be a common cause of cough in Singapore. To our knowledge, this is the first such study in South East Asia.