Cost-effectiveness of Long-term Management of Heartburn in Patients with Uninvestigated Gastroesophageal Reflux Disease (GERD)

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BACKGROUND

The optimal strategy for managing heartburn — intermittent or continuous maintenance of H2-receptor antagonists (H2RA) or proton pump inhibitors (PPI), step-down maintenance H2RA, and on-demand PPI — is controversial. Although PPIs are considered superior to H2RAs, they represent a higher acquisition cost.

OBJECTIVES

To compare the expected costs and outcomes of primary care strategies for managing moderate to severe heartburn over a one-year period.

METHODS

In producing this CADTH report, a previously published probabilistic Markov model (Goeree R, O’Brien BJ, Blackhouse G, Marshall J, Briggs A, Lad R. Cost-effectiveness and cost-utility of long-term management strategies for heartburn. Value Health 2002;5(4):312–28) was used to estimate the costs and outcomes of five treatment strategies for adults with moderate to severe heartburn (see Figure 1). A systematic review of published, controlled, clinical trials provided pooled estimates of symptom relief and recurrence probability for each strategy. Analyses were from a third-party payer perspective and were conducted for patients with uninvestigated GERD.

RESULTS

Strategies involving either on-demand or continuous H2RA therapy were shown to be less effective and more costly than on-demand or continuous PPI therapy (i.e., H2RAs were dominated). At a willingness to pay (WTP) of up to $28,000 per quality-adjusted life-year (QALY) gained, on-demand PPI was the most cost-effective strategy for patients with uninvestigated GERD. Similarly, for a WTP of $28,000 or greater, continuous standard-dose PPI maintenance was the most cost-effective strategy for patients with uninvestigated GERD.

Table 1: Expected cost, recurrences, weeks with heartburn symptoms and incremental cost-effectiveness: Uninvestigated GERD population

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Expected 1-year cost per patient</th>
<th>Expected economics per patient in year</th>
<th>Expected weeks with heartburn symptoms</th>
<th>Expected QALYS</th>
<th>Incremental cost per heartburn week averred (Cdns)</th>
<th>Incremental cost per QALY gained (Cdns)</th>
</tr>
</thead>
<tbody>
<tr>
<td>B: PPI on demand</td>
<td>$575</td>
<td>$0.405</td>
<td>3.05</td>
<td>0.999</td>
<td>$97</td>
<td>$27,848</td>
</tr>
<tr>
<td>D: PPI maintenance</td>
<td>$871</td>
<td>$0.197</td>
<td>5.7</td>
<td>0.905</td>
<td>Dominated by B</td>
<td></td>
</tr>
<tr>
<td>A: H2RA on demand</td>
<td>$464</td>
<td>$0.386</td>
<td>9.44</td>
<td>0.889</td>
<td>Dominated by B</td>
<td></td>
</tr>
<tr>
<td>E: PPI with step-down H2RA maintenance</td>
<td>$974</td>
<td>$0.199</td>
<td>5.85</td>
<td>0.903</td>
<td>Extendedly dominated</td>
<td></td>
</tr>
<tr>
<td>C: H2RA maintenance</td>
<td>$798</td>
<td>$0.249</td>
<td>7.95</td>
<td>0.896</td>
<td>Dominated by E</td>
<td></td>
</tr>
</tbody>
</table>

Key Economic Conclusions:

In patients with uninvestigated GERD:

- On-demand PPI therapy is the most cost-effective maintenance strategy at a WTP below $28,000 per QALY gained.
- Continuous PPI maintenance therapy is the most cost-effective strategy when the WTP exceeds $28,000 per QALY gained.

Policy implications:

- PPIs (at a price equal to or less than $1.25 per day) are the optimal therapy choice, both clinically and economically, for managing moderate to severe heartburn in patients with uninvestigated GERD. The strategy of choice is dependent on the decision maker’s WTP.