Modelling the cost-effectiveness of orlistat as a treatment for obesity in primary care

Ara R, Blake L

Health Economics and Decision Science (HEDS), School of Health and Related Research (SchARR), University of Sheffield, UK

OBJECTIVES

Obesity represents a considerable and increasing health problem. The objective of this research was to assess the clinical and cost-effectiveness of orlistat in overweight and obese patients in primary care in the UK.

METHODS

A cohort simulation model was built in Simul8 to explore the potential benefits of orlistat compared with standard care (Figure 1). The model used a lifetime horizon to estimate the incremental cost per quality adjusted life year (QALY) gained. Clinical effectiveness was modelled using the results of a mixed treatment comparison. Longitudinal analyses of the General Practitioners Registry Database (n=100,000) were used to derive BMI related estimates for times to death, primary myocardial infarction or stroke, onset of type 2 diabetes (T2DM), and to estimate the natural history of body max index (BMI) in people who are obese.

RESULTS

Deterministic analysis gave a cost per QALY gained (versus placebo) of £1,655. Sensitivity analysis was conducted to test the robustness of the results to changes in key parameter values. The baseline BMI was the most sensitive parameter (Figure 2) due to the strong correlation of BMI and the risk of CV events and T2DM.

Table 1 Average costs and QALYs from the deterministic analysis

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Costs undiscounted</th>
<th>Costs discounted</th>
<th>QALYs undiscounted</th>
<th>QALYs discounted</th>
<th>Cost per QALY</th>
</tr>
</thead>
<tbody>
<tr>
<td>placebo</td>
<td>£5,286</td>
<td>£2,806</td>
<td>25.123</td>
<td>15.128</td>
<td></td>
</tr>
<tr>
<td>orlistat</td>
<td>£5,547</td>
<td>£3,097</td>
<td>25.468</td>
<td>15.303</td>
<td>£1,665</td>
</tr>
</tbody>
</table>

CONCLUSIONS

Orlistat is a cost-effective treatment to aid weight reduction in primary care when using a threshold or £20,000 per QALY.

CONTACT

Roberta Ara, Email: r.m.ara@sheffield.ac.uk; Tel: +44 (0) 114 222 0788  Web: www.sheffield.ac.uk/heds

FUNDING ACKNOWLEDGEMENT

This work was funded by the NIHR HTA Programme (reference 07/85/02). The views expressed here reflect those of the authors and do not necessarily reflect those of the NIHR. None of the authors have any conflicts of interest.