

**NATIONAL INSTITUTE FOR HEALTH AND CLINICAL EXCELLENCE**

**Health Technology Appraisal**

**Lorcaserin hydrochloride for the treatment of obesity and overweight**

**Draft scope (Pre-referral)**

**Draft remit/appraisal objective**

To appraise the clinical and cost effectiveness of lorcaserin hydrochloride within its licensed indication for the treatment of adults who are obese and the treatment of adults who are overweight who have at least one obesity related co-morbidity.

**Background**

Obesity is a chronic condition characterised by increased body fat, which poses a significant risk to health. The most common method for measuring obesity is body mass index (BMI) which is calculated as the ratio of weight to height squared. In adults, overweight is typically defined by a BMI of 25 kg/m<sup>2</sup> to 29 kg/m<sup>2</sup> and obesity by a BMI of 30 kg/m<sup>2</sup> or more.

In 2006, 38% of adults in England were classed as being overweight and 24% as obese. The prevalence of obesity is rising, and of particular concern is the increased prevalence in children and young adults. Prevalence also varies among ethnic groups.

People with obesity are at increased risk of developing cardiovascular disease, type-2 diabetes, atherosclerosis (the presence of fatty deposits in the arteries), hypertension and dyslipidaemia (abnormal levels of fats in the blood).

Current treatment of obesity includes dietary and lifestyle advice, pharmacological treatments, such as orlistat and sibutramine, and surgical intervention. NICE clinical guideline 43 for the prevention, identification, assessment and management of overweight and obesity in adults and children recommends orlistat and sibutramine only as part of an overall plan for managing obesity in adults within their licensed indications. Drug therapy should be considered only after dietary, exercise and behavioural approaches have been started and evaluated. Orlistat should be prescribed for the management of obesity in people with a BMI of 30 kg/m<sup>2</sup> or more, and in people with a BMI of 28 kg/m<sup>2</sup> or more and significant co-morbidities. The guidance recommends that sibutramine should be prescribed for the management of obesity in people with a BMI of 30 kg/m<sup>2</sup> or more, and in people with a BMI of 27 kg/m<sup>2</sup> or more and significant co-morbidities. Sibutramine is contraindicated in people with a history of cardiovascular disease.

### The technology

Lorcaserin hydrochloride (brand name to be confirmed, Arena Pharmaceuticals) selectively stimulates the serotonin 2C (5-HT<sub>2C</sub>) receptor, which is located in the hypothalamus, the area of the brain associated with regulation of satiety, macronutrient selection and metabolism. Lorcaserin hydrochloride is administered orally at 10mg once or twice daily. It is intended for use in combination with behaviour modification.

Lorcaserin hydrochloride does not have a UK marketing authorisation. It has been studied in three trials examining its effect in combination with behaviour modification, compared to placebo, in overweight adults with at least one co-morbid condition (hypertension, dyslipidemia, cardiovascular disease, glucose intolerance or sleep apnoea), in obese adults with or without at least one comorbid condition, and in overweight and obese adults with type 2 diabetes.

<b>Intervention(s)</b>	Lorcaserin hydrochloride in combination with behaviour modification.
<b>Population(s)</b>	<ul style="list-style-type: none"> <li>• Obese adults (BMI <math>\geq</math> 30 kg/m<sup>2</sup>)</li> <li>• Overweight adults (BMI &gt; 27 kg/m<sup>2</sup>) with at least one comorbid condition.</li> </ul>
<b>Comparators</b>	Pharmacological interventions, including orlistat and sibutramine
<b>Outcomes</b>	<p>The outcome measures to be considered include:</p> <ul style="list-style-type: none"> <li>• BMI/body weight</li> <li>• waist or hip circumference</li> <li>• cardiovascular events</li> <li>• mortality</li> <li>• adverse effects of treatment</li> <li>• health-related quality of life</li> </ul> <p>Where information on clinical endpoints is unavailable, consideration may be given to surrogate end-points such as:</p> <ul style="list-style-type: none"> <li>• cholesterol levels and lipid profiles (including LDL and HDL)</li> <li>• blood pressure</li> <li>• insulin resistance</li> </ul>

<p><b>Economic analysis</b></p>	<p>The reference case stipulates that the cost effectiveness of treatments should be expressed in terms of incremental cost per quality-adjusted life year.</p> <p>The reference case stipulates that the time horizon for estimating clinical and cost effectiveness should be sufficiently long to reflect any differences in costs or outcomes between the technologies being compared.</p> <p>Costs will be considered from an NHS and Personal Social Services perspective.</p>
<p><b>Other considerations</b></p>	<p>Guidance will only be issued in accordance with the marketing authorisation.</p>

<p><b>Related NICE recommendations</b></p>	<p>Clinical Guideline 43, December 2006. Obesity: the prevention, identification, assessment and management of overweight and obesity in adults and children. Expected review date: November 2011.</p> <p>Public Health Intervention Guidance 17, January 2009. Promoting physical activity for children and young people. Expected review date: to be confirmed.</p> <p>Public Health Intervention Guidance 2, March 2006. Four commonly used methods to increase physical activity. Expected review date: to be confirmed.</p> <p>Public Health Intervention Guidance 8, January 2008. Physical activity and the environment. Expected review date: to be confirmed.</p> <p>Public Health Intervention Guidance 13, May 2008. Promoting physical activity in the workplace. Expected review date: to be confirmed.</p> <p>Public Health Intervention Guidance in preparation: Weight management following childbirth. Earliest anticipated date of publication: July 2010.</p> <p>Public Health Intervention Guidance in preparation: Weight management in pregnancy. Earliest anticipated date of publication: June 2010.</p> <p>Public Health Intervention Guidance in preparation: Weight management for overweight and obese children: community interventions. Earliest anticipated date of publication: to be confirmed.</p> <p>Public Health Intervention Guidance in preparation: Identification and weight management of overweight and obese children in primary care. Earliest anticipated date of publication: to be confirmed.</p>
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### Questions for consultation

Have the most appropriate comparators for lorcaserin hydrochloride been included in the scope?

Is it appropriate to compare lorcaserin hydrochloride only with first-line pharmacological interventions such as orlistat and sibutramine? If so, would it be appropriate to consider the sequence in which these drugs should be used?

Are there any subgroups of people in whom the technology is expected to be more clinically effective and cost effective or other groups that should be examined separately, for example obese or overweight people with co-

morbidities such as type 2 diabetes and dyslipidaemia, or different ethnic groups?

Are there any issues that require special attention in light of the duty to have due regard to the need to eliminate unlawful discrimination and promote equality?

NICE intends to appraise this technology through its Single Technology Appraisal (STA) Process. We welcome comments on the appropriateness of appraising this topic through this process. (Information on the Institute's Technology Appraisal processes is available at [http://www.nice.org.uk/aboutnice/howwework/devnicetech/technologyappraisalprocessguides/technology\\_appraisal\\_process\\_guides.jsp](http://www.nice.org.uk/aboutnice/howwework/devnicetech/technologyappraisalprocessguides/technology_appraisal_process_guides.jsp)).