

J.1 Treatment for people with COPD-OSAHS overlap syndrome

Research question: What is the optimal treatment for people with COPD-OSAHS overlap syndrome – non-invasive ventilation or CPAP?

Why this is important:

In the COPD-OSAHS overlap syndrome, people face the symptom burden of both OSAHS and COPD, and in many cases the combination of these two conditions increases the risk of hypoventilation and acute decompensation. There have been no randomised, controlled trials to determine the tolerability, efficacy and cost effectiveness of CPAP compared to non-invasive

ventilation in ameliorating symptoms, controlling OSAHS and hypercapnia, nor the impact on health care utilisation.

Criteria for selecting high-priority research recommendations:

PICO question	<p><u>Population:</u> <i>Inclusion</i> Adults with COPD-OSAHS overlap syndrome, defined as COPD and OSAHS, with hypercapnia who are stable. <i>Exclusion:</i> Adults with COPD-OSAHS overlap syndrome who have decompensated and are acutely unwell</p> <p><u>Intervention:</u> CPAP, with minimisation by severity of OSAHS, COPD and hypercapnia</p> <p><u>Comparison:</u> Non-invasive ventilation</p> <p><u>Outcomes:</u></p> <ul style="list-style-type: none"> - Patient related outcome measures – Epworth Sleepiness scale and quality of life - Objective measures – Adherence to therapy, residual AHI, control of hypercapnia, blood pressure and cardiovascular events - Health care utilisation – medical contacts and hospital admissions - NHS costs and cost per quality-adjusted life-year. - Pre-specified sub-group analysis by severity of OSAHS, COPD and hypercapnia, types of CPAP (auto CPAP vs fixed CPAP)
Importance to patients or the population	<p>In COPD-OSAHS overlap syndrome with hypercapnia both CPAP and ventilation are used in clinical practice, with clinicians tending towards ventilation when hypercapnia is more significant. However, it is not known which treatment method is better tolerated by patients and more effective in improving symptoms, controlling OSAHS and hypercapnia or reducing the need for unplanned medical contacts. Theoretically, CPAP may be adequate to ameliorate hypercapnia through control of OSAHS, and it could be better tolerated since no synchronisation of breathing with the device is required. However it may not be as good at controlling hypoventilation.</p>
Relevance to NICE guidance	<p>Future NICE guidance can give specific recommendations regarding in which scenario CPAP or non-invasive ventilation is preferred for patients with COPD-OSAHS overlap syndrome.</p>
Relevance to the NHS	<p>A clear recommendation for situations in which CPAP or non-invasive ventilation should be used for patients with hypercapnic COPD-OSAHS overlap syndrome will help ensure best care is provided for patients. If CPAP was demonstrated to be non-inferior compared to ventilation (as has been demonstrated for selected patients with obesity hypoventilation and OSAHS), there are likely to be significant financial savings to the NHS.</p>
National priorities	<ul style="list-style-type: none"> • COPD commonly affects older age groups of patients • Optimal treatment may reduce hospital bed use
Current evidence base	<p>There is no head-to-head randomised controlled trial of CPAP versus non-invasive ventilation in patients with hypercapnic COPD-OSAHS overlap syndrome. Current decision-making is based upon data extrapolated from patients with obesity hypoventilation with OSAHS, and with COPD alone.</p>
Equality	<p>The recommendation is unlikely to impact on equality issues.</p>

Study design	Randomised, controlled single-blind trial with health economic analysis. Minimisation by severity of OSAHS, COPD and hypercapnia to allow sub-group analysis.
Feasibility	The trial is feasible, carried out as a multi-centre study. Treatments offered are in keeping with those presently used in clinical practice, so no patient would have delay in provision of a recognised treatment.
Other comments	The trial may attract commercial funding from companies who provide CPAP and non-invasive ventilation.
Importance	High: the research is essential to inform future updates of key recommendations in the guideline and maximise resource allocation