estimated the number of referred patients, 60% saw more than >5 per month. Of centres with no policy only 26% estimated that they received >5 referrals per month. Without a policy 72% of referrals came from clinical suspicion alone.

Overall 96% of respondents felt that all patients at high risk of OSA should be screened for OSA. 56 respondents thought it would be ethical to randomise identified cases of OSA to a potential trial of peri-operative CPAP or no CPAP, compared with 40 who did not.

Conclusions There is no established UK standard practice for screening for OSA pre-operatively, despite a majority opinion amongst questionnaire responders that high risk patients should be. There would be cost implications if National pre-operative OSA screening was implemented and there therefore needs to be clear evidence based benefit before proceeding.

Intervention Some patients with OSAS are at higher risk of being involved in road traffic accidents. No objective tests have been shown to predict reliably whether an individual is safe to drive or not and there is significant variation in the advice given by the clinicians. Using continuously measured variables in an advanced PC-based driving simulator the at risk patients can be identified with a high degree of accuracy.

We have investigated whether this finding is repeatable. Individuals may “raise their game” if they know that their licence is at stake. We have therefore also investigated the effect of an incentive on the test.

Methods 150 untreated OSAS patients (males-131) were randomised to either the repeatability (n = 50) or incentive arm (n = 100). All performed a simulator run, after initial acclimatisation. In the repeatability arm, patients performed the simulator run on two separate occasions with no knowledge of the results. In the incentive arm, patients performed the simulator run on two separate occasions but just prior to the second run were told about their performance and offered a prize if they could improve their performance by 10%.

SDLP in epoch 3 and “veer” reaction time (Veer-RT) were the co-primary outcome variables. Classification of patients into "pass", "fail" and "indeterminate" were the secondary outcome variables. Results were analysed using paired and unpaired T tests with the level of significance set at p < 0.05.

Results 137 patients (repeatability arm=48, incentive arm=89) completed the trial. The median duration between the two simulator runs was 13 days (range, 5–55). SDLP in epoch 3 and Veer-RT were repeatable (P = 0.54, Δ SDLP = 0.01 and P = 0.37, Δ Veer-RT = 0.13) respectively. There was no effect of an incentive on SDLP in epoch 3 (P=0.18) and Veer-RT (P=0.57). There was no difference in the simulator outcome between the two runs [pass (P = 0.70), indeterminate (0.06), fail (P = 0.16)].

Conclusions SDLP and Veer-RT are consistent between runs on the MiniUoLDS and this is not affected by a simple incentive. Advanced office PC based simulators may be helpful when advising patients with OSAS about driving.

REPEATABILITY AND EFFECT OF INCENTIVES ON AN OFFICE BASED ADVANCED DRIVING SIMULATOR (MINIUOULDS) TO ASSESS PERFORMANCE IN OBSTRUCTIVE SLEEP APNOEA SYNDROME (OSAS)

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Introduction Some patients with OSAS are at higher risk of being involved in road traffic accidents. No objective tests have been shown to predict reliably whether an individual is safe to drive or not and there is significant variation in the advice given by the clinicians. Using continuously measured variables in an advanced PC-based driving simulator the at risk patients can be identified with a high degree of accuracy.

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Conclusions SDLP and Veer-RT are consistent between runs on the MiniUoLDS and this is not affected by a simple incentive. Advanced office PC based simulators may be helpful when advising patients with OSAS about driving.
Abstract S26 Table 1

<table>
<thead>
<tr>
<th>DOMAINS</th>
<th>Pearson correlation coefficient</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEST X-RAY</td>
<td>-0.74</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>LUNG FUNCTION (Vmax (FVC), FEV1 predicted)</td>
<td>-0.48</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>SLEEP VARIABLES</td>
<td>-0.59</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>VENTILATORY CONTROL</td>
<td>-0.68</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Fall in Oxygen saturation during 15% O2 challenge</td>
<td>-0.46</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Left basal respiratory pressure</td>
<td>-0.26</td>
<td>0.02</td>
</tr>
<tr>
<td>Metabolic measures</td>
<td>-0.30</td>
<td>0.01</td>
</tr>
<tr>
<td>OVERALL BEST INDEPENDENT PREDICTORS</td>
<td>Correlation coefficient</td>
<td>p-value</td>
</tr>
<tr>
<td>Fall in Oxygen saturation during 15% O2 challenge</td>
<td>-0.49</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>
| The table shows the correlation coefficient for the statistically strongest predictors of a raised BE in each domain by multiple linear regression. The bottom of the table shows the overall outcome of the multiple linear regression, when each of the strongest independent predictors were matched against each other.

Liraglutide 3.0 mg reduces severity of obstructive sleep apnoea (OSA) in obese individuals with moderate or severe disease: Scale sleep Apnoea Trial

S28

Aims/objectives This randomised, double-blind, parallel-group trial compared the effects of liraglutide 3.0 mg to placebo, both as adjunct to diet and exercise, on obstructive sleep apnoea (OSA) severity and body weight.

Content Obsese individuals (n = 359) without diabetes who had moderate or severe OSA and were unwilling/unable to use continuous positive airway pressure therapy were randomised 1:1 to liraglutide 3.0 mg or placebo for 32 weeks (baseline characteristics: 48.5 years, males 71.9%, apnoea-hypopnoea index [AHI] 49.2 events/h, body weight 117.6 kg, BMI 39.1 kg/m², HbA1c 5.7%).

Outcomes At end-of-trial, the reduction in AHI was significantly greater with liraglutide 3.0 mg than placebo (Table). Liraglutide

Venuous bicarbonate as a clinical tool for identifying obesity hypoventilation syndrome in the sleep clinic

S27

Introduction Obesity Hypoventilation Syndrome (OHS) is defined as sleep disordered breathing, obesity, and daytime hypercapnia, without another cause of ventilatory impairment. Literature suggests 10–25% of patients assessed for Obstructive Sleep Apnoea (OSA) have OHS, with significantly increased morbidity and mortality. Early identification may be beneficial. Studies suggest venous bicarbonate (vHCO3-) ≥27 mmol/l can be used to screen for OHS. We assessed the impact of incorporating this measurement into patient assessment.

Methods Obese out-patients referred for possible OSA had vHCO3- measured. Patients with a vHCO3- ≥27 mmol/l underwent arterial blood gas (ABG) analysis. Those with pCO2 >6.2 kPa underwent further assessments to identify the cause of ventilatory impairment. None had been referred specifically for investigation of OHS. Patients had domiciliary or in-patient sleep studies as per standard practice.

Results There were 288 patients included: 65% males, mean (SD) age 50 years (range 21–79 years), BMI 39.2 kg/m² (7.8), Epworth Sleepiness Scale 13 (6), daytime SpO2 on air 97% (2.1). Sleep study results showed the Apnoea-Hypopnoea Index (AHI) to be ≥5 in 88%, and ≥30 in 49%. Mean vHCO3- was 26.2 mmol/l (2.7), vHCO3- correlated significantly (r = 0.3–0.4, p < 0.005) with daytime SpO2, mean overnight SpO2, time spent <80% and <90%, but not AHI or ODI.

vHCO3- was ≥27 mmol/l in 123 (43%), of whom 80 had an ABG measurement; mean pCO2 5.4 kPa (0.8), ten patients >6.2 kPa. Ventilatory impairment was due to OHS in four (5% of ABG cohort); there was additional lung or chest wall disease in the other six. Overall, 25 patients had a base excess ≥3. The vHCO3- range was 28–36 mmol/l in patients with OHS, with a BMI range of 38–53 kg/m².

Three additional outpatients with BMI ≥30 kg/m² were diagnosed with OHS on ABG without vHCO3- measurement. In all seven OHS patients, CPAP was initiated. One was non-compliant, four improved and two required home non-invasive ventilation due to non-improvement in ABG.

Conclusions In this large cohort of patients assessed for OSA, 43% had a vHCO3- ≥27 mmol/l indicating possible OHS, but only 5% were actually diagnosed with OHS. In isolation this strategy to identify OHS seems inefficient. An increased vHCO3- in combination with sleep study data may be superior.

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