"irresistible" (SL1V)) and adequacy of CPAP compliance. They were also asked about their use of objective tests.

Results 178 respondents completed the survey. There was poor agreement among clinicians regarding the presence of residual drowsiness (McNemar's test, figure-1). In response to the DVLA question about "excessive" drowsiness, the patient had a 1 in 2.57 (range-1.12 to 5.66), and about "irresistible" drowsiness, a 1 in 1.32 (range- 1.04 to 2.84), chance of being given a different answer depending on the clinician seen. Furthermore in each vignette the same clinician was more likely to say "yes" to "excessive" than to "irresistible" (71 +/-12% v/s 42 +/-10%, P-0.0045). There was also a lack of consensus as to what constitutes "adequate CPAP compliance". Across the vignettes there was minimum of 1 in 1.7 and a maximum of 1 in 6.7 chance of disagreement amongst the clinicians (median- 3, range 1.7 to 6.7). 1% of clinicians always and 4% frequently use objective tests to help in their assessment. They are more likely to use in professional drivers as compared to non professional drivers (52% v/s 38%, P-0.0002, OR-1.75). Tests used were MSLT (34%), OSLER (29%), MWT (28%) and divided attention driving simulator (9%).

Conclusions The information that the DVLA is given may vary markedly depending upon which clinician completes the form. Furthermore the same clinician may give a different impression to the DVLA depending on which form they are asked to complete. Objective testing is not undertaken routinely. Better guidance and better objective tests are needed to ensure consistency of the information that the DVLA is given.

P253 OBSTRUCTIVE SLEEP APNOEA SYNDROME: PATIENTS' EXPERIENCE OF THE DRIVER AND VEHICLE LICENSING AGENCY

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Introduction Driver's licence holders have a legal obligation to inform the Driver and Vehicle Licensing Authority (DVLA) if diagnosed with Obstructive Sleep Apnoea Syndrome (OSAS). This requirement may cause considerable anxiety but few data are available to advise patients on the likely outcomes following such notification.

Methods Patients diagnosed with OSAS and offered CPAP between 1st October 2009 and 31st March 2010 were surveyed anonymously and asked to report on: a) symptoms of sleepiness whilst driving before and after treatment; b) if they recalled being given advice about contacting the DVLA by healthcare professionals; c) whether they contacted the DVLA; d) the response of the DVLA if notified. The survey was performed between 1st June and 31st August 2010. To provide a description of the population surveyed 67 (10%) case notes were chosen at random from the population surveyed, reviewed and descriptive data extracted.

Results Six hundred and seventy three patients were surveyed and 297 (44%) responded. 92% were category B licence holders. The data outlining the surveyed population are in Table 1.

Sixty percent and 16% respectively reported no and moderate to severe sleepiness whilst driving, prior to treatment. Two hundred and six patients (69%) recalled being given advice about driving by a health care professional and of those 161 patients (78%) had informed the DVLA of their diagnosis. In total 197 patients (66%) had informed the DVLA of their OSAS. The DVLA asked 8% (16/197) to stop driving temporarily of which 80/197 contacted the DVLA prior to starting treatment. Five patients (2.5%) were deemed not fit to drive by the DVLA in the long term. The mean (SD) time for the DVLA to reach a decision was 29 (33) days.

Conclusion In summary, recognising its limits, in particular the risk of responder bias, this survey shows most OSAS patients offered CPAP do not experience problems with driving licence retention if they contact the DVLA. The DVLA infrequently ask patients to stop driving. Approximately one third of patients had not informed the DVLA of their OSAS during the timeframe of this survey.

Abstract P253 Table 1. Characteristics of the patient population sample

Characteristic	
Mean Age years (range)	54 (31-82)
Gender (male/female)	2.7:1
BMI (kg/m^2)	38 (9)
ESS at diagnosis	13 (5)
ESS post treatment	7 (5)
ODI at diagnosis	21 (20)
ODI post treatment	4 (12)
Compliance hours/night (measured by CPAP device)	5.8 (2)
Compliance with CPAP treatment >3.5 hours/night	72%
Recorded evidence in medical notes of advice regarding the DVLA	79%

BMI, body mass index; ESS, Epworth Sleepiness Score; ODI, oxygen desaturation index (4% drop in saturation/hour); CPAP, continuous positive airway pressure
Data presented as mean (SD) unless specified

P254 PREDICTING WHO NEEDS A HUMIDIFIER WITH CPAP

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Introduction Some patients using continuous positive airway pressure (CPAP) for the treatment of Obstructive Sleep Apnoea (OSA) require the addition of a heated humidifier to their CPAP machine. This is used to combat symptoms of dry nose and mouth and blocked nose which may limit CPAP adherence. We sought to establish whether there are any patient predictors for whether a humidifier will subsequently be needed. This might allow provision of more economical integrated CPAP/humidifiers.

Methods All patients commencing CPAP over a one year period completed a questionnaire with a member of the Sleep team at the time of CPAP set-up. The questionnaire asked about symptoms prior to CPAP including blocked, dry or runny nose and dry mouth on waking. Details of sleep study parameters such as ODI and AHI were obtained from hospital notes, along with anthropometric measures of body mass index (BMI) and neck size. The questionnaire also enquired about previous medical history (including ENT surgery), medications, smoking history and bedroom environment. Patients were given humidifiers according to usual practice as required after CPAP commencement, according to symptoms. The CPAP database was reviewed at the time of analysis to determine which patients had received humidifiers.

Results Questionnaires were completed by 185 people commencing CPAP from January 2012. The mean (SD) age of this group was 53 years (11.7), BMI 36.6 kg/m^2(7.1), neck size 43.9cm (4.4), ODI 29.3 (23). The proportions of different severities of OSA were 19% mild, 34% moderate and 47% severe. The frequencies of symptoms prior to CPAP were 87% dry mouth, 54% blocked nose, 40% dry nose and 22% runny nose.

In this cohort, 43% of people were given a humidifier.

There were no statistically significant correlations of any of the variables with humidifier outcome. Chi squared analysis showed no significant difference in the proportion of those people with humidifier versus those without for any of the questionnaire categories.

Conclusion It does not appear to be possible to prospectively predict which patients will require a humidifier with their CPAP. Current practice of symptom-led humidification appears valid.

P255 IMPROVEMENT OF SLEEP APNOEA SEVERITY IN OBESE PATIENTS PRE AND POST BARIATRIC SURGERY-IS THERE MORE TO IT?

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Background Obstructive Sleep Apnoea (OSA) is prevalent in obese patients and has substantial impact on health and society[1]. We undertook this analysis to examine changes in Sleep Apnoea severity by studying the Apnoea-Hypopnoea Index (AHI) pre and post bariatric surgery in a London District General Hospital.

Methods We retrospectively reviewed patients with a history of OSA who underwent a laparoscopic bariatric procedure between 2011 and 2012, preceded by a sleep study. Repeat sleep studies were performed in those patients who reported significant symptom reduction as part of the assessment to withdraw CPAP therapy. Following this, data concerning changes in BMI and corresponding AHI values were analysed as were Epworth Sleepiness Scale scores.

Results Twenty patients reported significant improvement in sleep apnoea symptoms and requested to come off CPAP therapy. Nineteen of them underwent a repeat sleep study. The mean age of the patients was 45 years (SEM = 2.1) with 14 of them being females. The mean pre and post-surgery BMI were 49 kg/m^2 (SEM = 1.4) and 40 kg/m^2 (SEM = 1.8)respectively (p = 0.000, paired t-test). The mean Epworth sleepiness scale scores were 13.3 and 7.4 (p = 0.001, paired t test) respectively for the same patients. The average time period for repeat sleep studies was 7 months (range 2 - 19). The mean baseline AHI pre surgery was 41 (SEM = 6.5) and the corresponding value post-surgery was 12.4 (SEM = 2.7) (p = 0.000, paired t-test). The correlation co-efficient corresponding to percentage decrease in BMI and AHI was 0.44 (Spearman's correlation). The majority of patients included in this analysis discontinued the use of CPAP and continue to remain well.

Conclusion This analysis demonstrates the positive outcome on AHI and Epworth sleepiness scale scores following laparoscopic bariatric surgery. The correlation between percentage changes in BMI and AHI suggest there may be factors other than weight reduction alone contributing to the outcome.

[1]Scottish Intercollegiate Guidelines Network (2003). Management of Obstructive Sleep Apnoea/Hypopnoea Syndrome in Adults:73. Edinburgh: Scottish Intercollegiate Guidelines Network.

P256 TREATMENT OF OBSTRUCTIVE SLEEP APNOEA SYNDROME WITH CONTINUOUS POSITIVE AIRWAYS PRESSURE ALTERS HAEMOSTASIS: FURTHER DATA ON THE USE OF FRACTAL ANALYSIS TO MEASURE MICROSTRUCTURE OF INCIPIENT CLOT

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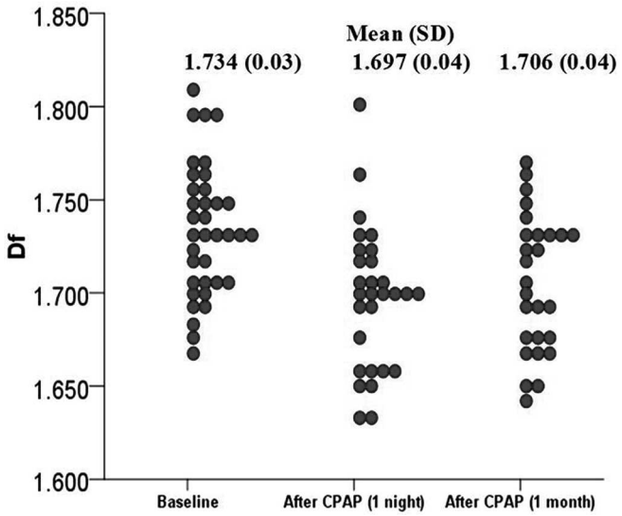
Introduction Untreated obstructive sleep apnoea syndrome (OSAS) increases cardiovascular risk and altered haemostasis is at least partly implicated. As previously reported using fractal analysis and a new biomarker called fractal dimension (Df) it is possible to assess the microstructure of incipient clot in whole blood (1). Df relates to the kinetics of clot formation and quantifies clot fibrin network microstructure as it forms. A higher Df represents a more pro-coagulable state. Healthy volunteers have a reproducible Df of 1.74(0.07) (2).

Aim To see if Df changes in OSAS after an acute and subacute treatment with CPAP.

Methods 36 patients with newly diagnosed OSAS: 32 males, mean (SD), BMI = 37.1 (7.5) kg/m^2, age 56.6 (10.2) years, 4% desaturation rate (4% DR) = 44.6 (31.1) events/hour, Epworth Sleepiness Score (ESS) 13.23 (5.0). Blood was collected at baseline prior to CPAP treatment and then after the first night and 4 weeks of CPAP. Samples were tested for fractal analysis (AR-G2 Rheometer, TA Instruments, UK).

Results Patients who were commenced on CPAP were followed up within an average of 36.97(6.29) days. CPAP compliance was overall satisfactory with a mask on average time of 4.43 (1.8) hrs/night. Repeated overnight pulse oximetry while on CPAP showed a significant improvement in sleep study variables (4% DR = 7.58 (8.3) events/hr; p < 0.001) when compared to pre-CPAP measurements. CPAP use resulted in the significant reduction in Df (ANOVA p < 0.001) (Figure 1). Post-hoc analysis (Tukey HSD) showed that an acute (1 night, p < 0.001) and a short period (1 month, p = 0.01) CPAP treatment both resulted in the significant change in Df levels when compared to the baseline.

Conclusion As reported previously OSAS is associated with a significantly increased prothrombotic state in the morning that is detected by Df. Acute CPAP use in OSAS is sufficient to alter fibrin clot microstructure which can be quantified with Df. This preliminary data suggest Df could be used as a new sensitive biomarker to assess vascular risk.



Abstract P256 Figure 1. Individual Df measurements at the baseline and after a night of CPAP treatment and a month of CPAP treatment in OSAS group.