PATIENT ACTIVITY LEVELS AND OXYGEN DEVICE PREFERENCE: AN RCT COMPARING REFILLABLE CYLINDERS (HOMEFILL™) WITH USUAL AMBULATORY DEVICE

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Introduction The benefit of ambulatory oxygen (AO) in patients with hypoxaemia on exercise remains contentious. Often AO is not used in the way the prescribers envisage. Device suitability or poor understanding about the benefits of AO may mean patients remain hypoxic on activity and/or avoid exercise.

Objective To assess patients activity and preference using Homefill™ versus usual AO device in a mixed population of patients with exercise hypoxaemia and/or LTOT. Homefill™ allows patient refill of oxygen cylinders (1.9 L) as needed using a compressor.

Methods Inclusion criteria included current use of AO and stable physical condition. AO prescription was optimised for each device. Patients were randomised to usual AO then Homefill™ for 6 wks or vice versa. Tri-axial activity monitors were used during the last week. Patient preference was identified by questionnaire. Weekly calls encouraging activity and AO use were made. If patients suffered an inter-current illness, the trial arm was extended by 2 wks; those with >1 illness were withdrawn. Power calculation indicated a sample of 40 subjects was required to detect a difference of 1,000 domestic activity counts at a 5% significance level with 80% power.

Results 70 patients met the inclusion criteria and 40 enrolled. Mean age 66 yrs, 17 males, 70% had COPD with median FEV1 41% predicted (range 27–71%), restrictive median FVC 70% predicted. 29 complete data sets were collected. There were 9 episodes of AECOPD. Fifteen patients required the highest 02 pulsed setting on Homefill™. There was no statistically significant difference in mean daily activity counts when using Homefill™ compared to usual AO. A decline in activity counts was observed in both cohorts during the second period. Eighteen patients elected to keep Homefill™ of whom 11 previously used LOX as their usual AO.

Conclusions Homefill was equivalent to usual provision of AO and was preferred by the majority. Disappointingly, regular phone encouragement failed to increase activity levels. Activity levels were very low and highly variable reflecting advanced disease/deconditioning.

Implications for Practice Patient use and preference of AO device includes non physiological aspects. AO maybe best targeted at patients before exercise tolerance is severely limited.

POST-OPERATIVE OXYGEN SATURATION, PRESCRIBING & ADMINISTRATION IN PATIENTS UNDERGOING ELECTIVE ORTHOPAEDIC SURGERY

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Introduction There is increasing interest in maximising perioperative care of surgical patients, including response to oxygen desaturation which may occur in association with anaesthesia, analgesic/sedative drugs, and/or indicate pathology. There is thus potentially great importance in understanding the incidence and profile of oxygen desaturation in the post-operative patient, and documenting our response to it.

Methods We recorded sequential SpO2 values and oxygen prescription/administration from the charts of 65 patients (mean age 56.5 years (SD 20.2), BMI 29.6 (10.5), 38 Females) admitted to University College London Hospital for elective orthopaedic surgery, starting at point of transfer from recovery room to ward. Nine were current smokers, one patient had COPD, and eight had possible sleep apnoea. None used home oxygen or CPAP and all were normoxic pre-operatively.

Results One-third (30.8%; 20/65) of patients experienced an isolated, minor desaturation event (Figure 1): mean minimum SpO2 91.9% (SD 2.2). ‘Desaturators’ were older (P=0.038) but not ‘sicker’ compared to those who remained normoxic, determined by smoking status and ASA grade, and by post-operative rate of chest x-ray request, blood transfusion, and antibiotic requirement. Thus, the majority of desaturations were minor and of limited clinical
Poster sessions

Diagnosis and management of TB

**P48** VITAMIN D LEVELS ARE NOT ASSOCIATED WITH MARKERS OF INFLAMMATION AND DISEASE SEVERITY IN ACUTE TUBERCULOSIS
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**Background** There is considerable evidence that patients with clinical tuberculosis in the UK have low levels of circulating Vitamin D. It has been suggested that acquired Vitamin D deficiency impairs immune function and therefore allows patients to transform from latent to clinical tuberculosis. Sceptics have suggested that the low Vitamin D levels seen in clinical tuberculosis are a result of disease activity rather than a cause of it. We examined whether Vitamin D levels were associated with blood markers of inflammation and disease activity in patients newly diagnosed with tuberculosis.

**Methods** All patients diagnosed with tuberculosis at an inner London teaching hospital since 2000 were eligible for inclusion in the study although systematic measurement of Vitamin D levels has only been attempted in recent years. Vitamin D levels were classified as deficient <=10ng/ml, insufficient >10 to <30ng/ml and sufficient >=30ng/ml. The date treatment started was recorded. The first blood measurement of Vitamin D, Haemoglobin, Neutrophil count, c-reactive protein (CRP), erythrocyte sedimentation rate (ESR) and albumin taken within two weeks of treatment starting were recorded. All variables were assessed for correlation with one another using Pearson’s correlation coefficient in SPSS.

**Results** One thousand four hundred and twenty two patients were identified of whom 262 had a measurement of Vitamin D. 151 (58%) were Vitamin D deficient and a further 96 (37%), Vitamin D insufficient. Data availability ranged from 1266 patients with a serum albumin to 222 patients with an ESR. Blood markers of disease severity and inflammation were significantly correlated but Vitamin D levels did not correlate with any of the other variables.

**Discussion** These data do not support the hypothesis that low Vitamin D levels in acute tuberculosis are a result of disease activity or severity. It would be reasonable to consider the prevention of Vitamin D deficiency as a means to reduce the conversion of latent to clinical tuberculosis.

**References**


**P49** TUBERCULOSIS IN BIRMINGHAM IS SEASONAL
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**Background** Birmingham is a large industrial city with migrant populations from Pakistan, India, Somalia and Eritrea. Central Birmingham is highly endemic for tuberculosis (TB) with an annual