Exercise intolerance limits daily activities of COPD patients. Noninvasive ventilation improves exercise capacity in severe COPD, but previous systems are impractical for ambulatory use. This study evaluated a 0.45 kg noninvasive open ventilation (NIOV) system (Breathe Technologies), designed for nasal delivery of compressed O₂ with each inhalation.

This was a randomized single-blinded study of 10 men with severe-to-very severe COPD and exercise desaturation. Following a test day in which a cycle ergometer constant work rate (CWR) was established, subjects completed 3 additional days in which 2-3 CWR tests (separated by 1.5 hrs) were performed in random order. Tests were: unencumbered room air, NIOV+air, NIOV+O₂, or O₂ via standard nasal cannula. Data collected included exercise time, SpO₂ and transcutaneous (Tc) PCO₂.

86. The latest insights in chronic care
Subjects ages were 67±9y, with FEV1/FVC=29±6% and FEV1=30±12% pred. Compared to unencumbered and NIOV-air arms, endurance was prolonged >75% by nasal cannula O2 and >33% by NIOV-O2 (Table). The greater endurance in the NIOV-O2 group was accompanied by higher SpO2, but unaltered fTCO2.

Responses to CWR exercise

<table>
<thead>
<tr>
<th>Room air</th>
<th>O2 Cannula</th>
<th>NIOV Air</th>
<th>NIOV O2</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endurance (min)</td>
<td>5.2 (2.0)</td>
<td>9.8 (2.7)</td>
<td>17.2 (2.5)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>SpO2 (%)</td>
<td>87.3 (2.2)</td>
<td>92.7 (4.7)</td>
<td>86.9 (3.9)</td>
<td>98.5 (1.1)</td>
</tr>
<tr>
<td>fTCO2</td>
<td>47.5 (7.8)</td>
<td>42.6 (1.8)</td>
<td>44.5 (6.5)</td>
<td>45.6 (6.1)</td>
</tr>
</tbody>
</table>

SpO2 (%) 87.5 (2.2) 92.1 (4.7) 86.9 (3.9) 98.5 (1.1)
P = <0.0001

Exercise endurance was dramatically enhanced using the NIOV system+O2. These data suggest that this system is a practical means to improve tolerance of everyday activities in oxygen-dependent severe COPD.

P601

The minimal clinically important difference (MCID) for the six minute walk (6MW) test in COPD in relation to death

Michael Polkey 1, Martin Spruit 1, Lisa Edwards 1, Michael Watkins 1,
Vincent Paris-Plana 2, Jorgen Vestbo 2, Peter Calverley 3, Ruth Tal-Singer 3, Alvar Agusti 4, Per Bakke 5, Harvey Coxson 6, David Lomas 7.

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Introduction: The 6MW is used to assess interventions in COPD but existing estimates of the MCID for this test have been derived from narrow cohorts where a non-blinded intervention, for example pulmonary rehabilitation, had been applied.

Objective: To define the MCID for 6MW distance in an unselected population.

Methods: Data from the ECLIPSE cohort were used. Briefly, 2112 patients were prospectively followed for 3 years in a multicentre study. We defined an index event as death or first hospitalisation and calculated the change in 6MW (Δ6MW) in the last 12 month period before the event occurred. If a patient did not have an event the last 12 month change was used. We also related Δ6MW to commonly used outcome measures in COPD: FEV1 and St Georges Respiratory Questionnaire (SGRQ-C).

Results: Of the subjects with Δ6MW, 94 patients died and 323 were hospitalised. 6MW fell by mean (SD) 29.7 (82.9) more in those who died than survivors (p<0.0001). No significant difference in Δ6MW was observed in those who had a first hospitalisation than those who did not. Cox proportional hazard modelling showed that a Δ6MW of more than ~30m conferred a hazard ratio of 1.93 (95% CI: 1.29, 2.90; p=0.001) for death. Weak relationships only were observed between Δ6MW and ΔFEV1, or Δ SGRQ.

Conclusions: A fall in 6MW of 30m or more is associated with increased risk of death in patients with COPD and therefore represents a clinically significant MCID for this test. The modest relationships between Δ6MW and ΔFEV1 or Δ SGRQ suggest that anchor based methods for determining MCID are context dependent. Funded by GSK, (SCO104960, NCT00292552).

P602

A longitudinal study evaluating the relationship between exacerbations and directly measured physical activity in outpatient COPD patients

Muhammad Ejaz 1, Rana Khair 1, Karti Lomai 1, Asif Qureshi 1, Richard ZuWallack 1, Nancy Kline Leidy 2, Dick Van der Wall 3, Deidre Smyth 3, Sarah Newby 3, Joanne King, Rachel Arnold, Richard Russell, Mona Bafadhel

1Consultant Respiratory Medicine, Heatherwood & Wexham Park Hospital NHS Foundation Trust, Slough, Berkshire, United Kingdom

Background: Data to support them with reductions in exacerbations or mortality has not been whelmed conclusive

Method: 12 months pre & post instigation of an early discharge with admission avoidance service (EDS-AA) was available to COPD exacerbation patients hospitalised at our hospital, providing care to a population of 45000, covering the Bucks (B) & East Berks (EB) area. Currently only patients from EB qualify for care with the EDS-AA team. The EDS-AA team takes patients home within 5 days of admission & offer support for 10 days after. Subsequent to this, patients are offered direct EDS-AA team access, including home visits,telephone advice & self-management strategies

P603

Doctors’ awareness of the Gold standard framework (GSF) for palliation in chronic obstructive pulmonary disease (COPD)

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1Aintree Chest Centre, University Hospital Aintree, Liverpool, Merseyside, United Kingdom; 2Respiratory Department, Royal Liverpool University Hospital, Liverpool, Merseyside, United Kingdom

Background: The GSF aims to improve the quality of patient care in the final year of life, to reduce hospitalisation by reducing length of stay, to facilitate rapid discharge and admission avoidance thereby reduce costs and improving cost effectiveness.

Aims: To assess the awareness of the GSF framework in COPD amongst the doctors and nurses working in two University hospitals.

Methods: An anonymous questionnaire was administered to doctors and nurses from various grades from February 2011 to February 2012 in two University hospitals.

Results: 60 randomly selected doctors (5 consultants, 20 specialist registrars, 20 senior house officers, 15 house officers) and 20 nurses from different grades completed the questionnaire. 39 (49%) healthcare professionals had previous palliative care experience. Only a small proportion (14%) of them understood the GSF. 12 (15%) healthcare professionals were aware of prognostic indicators guidance.

Conclusions: This survey demonstrates that most doctors and nurses realise the need to consider palliation in severe COPD, though only a minority are aware of the framework designed to facilitate this in clinical practice.

We suggest education and training of healthcare professionals on the GSF to increase awareness and thereby improve the quality of care for COPD patients receiving hospital care in the final year of life. Through organisational culture change our institution may enable better teamwork, leading to more coordinated cross boundary care.

Reference: National GSF centre overview paper.

P604

Early discharge COPD experience: Reduction of severe exacerbations requiring hospitalisation

Joanne King, Rachel Arnold, Richard Russell, Mona Bafadhel

Respiratory Medicine, Heatherwood & Wexham Park Hospital NHS Foundation Trust, Slough, Berkshire, United Kingdom

Introduction: Hospital at home schemes for COPD exacerbations are used but evidence to support them with reductions in exacerbations or mortality has not been whelmed conclusive

Method: Data 12 months pre & post instigation of an early discharge with admission avoidance service (EDS-AA) was available to COPD exacerbation patients hospitalised at our hospital, providing care to a population of 45000, covering the Bucks (B) & East Berks (EB) area. Currently only patients from EB qualify for care with the EDS-AA team. The EDS-AA team takes patients home within 5 days of admission & offer support for 10 days after. Subsequent to this, patients are offered direct EDS-AA team access, including home visits, telephone advice & self-management strategies

Result: Data was available in 95 COPD patients hospitalised with a severe COPD exacerbation. The mean (range) age was 75 (48-99) years & severity of COPD was classified as GOLD I, II, III & IV in 5%, 33%, 31% & 31% of patients. The mean (range) exacerbation frequency prior to the EDS-AA service was 1 (0-4) in 12 patients. 64% of exacerbations occurred in patients from the EB region & were discharged with the EDS-AA service. There was a significant reduction in the 12 month exacerbation rate requiring hospitalisation in the EB group (mean difference 0.5, 95% CI 0.8 to -0.2, p=0.003) but not the B group (mean difference 0.0, 95% CI -0.4 to 0.3, p=0.865). Mortality was not different in patients on the EDS-AA service compared to those that were not (13% vs 9%, p=0.43)

Conclusion: The institution of a specialised EDS-AA service at our hospital was associated with reductions in COPD exacerbations requiring hospitalisation & has significant cost implications.
P605 Factors affecting physical activity in patients with air pollution-related illness compared to patients with COPD

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1Medical Sciences, Nagasaki University Graduate School of Biomedical Sciences, Nagasaki, Japan; 2Rehabilitation, Nagasaki Pulmonary Rehabilitation Clinic, Nagasaki, Japan.

Background: The survival of chronic obstructive pulmonary disease (COPD) patients has been reported to be associated with physical activity (PA). However, there have been no reports concerning PA in patients with air pollution-related illness (API), who have symptoms of dyspnea similar to COPD patients.

Objectives: We investigated the factors affecting PA in patients with API compared with COPD patients.

Methods: The study subjects were 30 patients with API and 38 COPD patients. The MRC dyspnea scale (MRC), pulmonary function, muscle strength, six-minute walking test (6MWT), incremental shuttle walking test (ISWT), ADL score, SGRQ, CES-D and PA were measured. PA was assessed using a multisensor accelerometer that recorded steps and energy expenditure for 7 consecutive days after admission for pulmonary rehabilitation. An analysis was performed to examine the differences between the two groups in order to identify the factors that influence PA in patients with API.

Results: Patients with API had significantly better pulmonary function compared with COPD patients (p<0.001). However, their leg strength, exercise tolerance and QOL were significantly worse (p<0.01), and a higher incidence of depression symptoms were seen in patients with API (p<0.05). On the other hand, the differences of MRC and PA were not significant between the two groups. PA of patients with API was correlated with the MRC, %VC, ISWT and ADL score, while PA of COPD patients was correlated with the MRC, %VC, ISWT and ADL score.

Conclusions: To improve MRC, ISWT and ADL that influence PA, pulmonary rehabilitation as well as other treatments may therefore be useful in treating patients with API.

P606 COPD-mortality, a two years retrospective study

Britt-Marie Sundblad1,2, Departement of Public Health and Clinical Medicine, Umeå University, Umeå, Sweden; 2Department of Public Health and Clinical Medicine, Umeå University, Umeå, Sweden.

Objective: To describe the disease and the care of COPD patients during their last two years. The aim was also to find out whether there are gender and/or regional differences with regard to terminal COPD care in Sweden.

Method: Retrospective collection of data from patients records from all patients of death. Median disease duration was 6.0 (range 0-36) years with no difference with regard to gender or area and the diagnosis was based on lung function measurement in two years. The aim was also to find out whether there are gender and/or regional differences with regard to terminal COPD care in Sweden.

Results: Out of 822 deaths from COPD, sufficient information was found for 729 (89%). Nineteen patients did not die in 2003-2004 with COPD as the underlying cause of death. Median disease duration was 6.0 (range 0-36) years with no difference by gender or area and the diagnosis was based on lung function measurement in 47% of the patients. Median age at death was 78 (range 52-96) years in women and 80 (51-99) years in men (corresponding figures for all who died in 2003 in Sweden were, 82.6 and 78.1, respectively). The proportion of current smokers at the time of death was 41% in women and 33% in men (p<0.02).

Most of the patients died at hospital (68%) while 13% died at home. Care days during the two last years were in average 23 days and in 63% of the patients a history of one or more exacerbations were reported.

Conclusions: In Sweden women become 4 years older than men but women with COPD had shorter length of life than had men. This indicates a faster COPD-course and a higher occurrence of MRC and PA were not significant between the two groups. PA of patients with API was correlated with the MRC, %VC, ISWT and ADL score, while PA of COPD patients was correlated with the MRC, %VC, ISWT and ADL score.

P607 Subjective sensation of dyspnea relates to physical inactivity in COPD

Milla Karvonen, Henri Kupiainen, Piritta Rantanen, Ari Lindqvist, Heikki Tikkanen, Maritta Kilpeläinen, Tarja Laitinen. Clinical Research Unit for Pulmonary Diseases and Division of Pulmonology, Helsinki University Central Hospital, Helsinki, Uusimaa, Finland.

Objective: To investigate the factors affecting physical activity in patients with COPD. We also noticed significant statistical difference (p<0.001) in the quality of life (r=0.25, p<0.001), quality of life (r=0.37, p<0.01) and bronchial obstruction (r=0.18, p<0.01). Sensation of dyspnea captured by Medical Research Council dyspnea scale was significantly stronger among inactive patients.

Conclusions: Co-morbidities did not explain physical inactivity. Even though provision of inactive patients increased with disease progression, many patients with severe disease experienced dyspnea related to physical inactivity. When COPD patient suffers from dyspnea, actions should be taken to promote physical activity.

P608 Increase motivation and effectiveness in cystic fibrosis teenagers using sport activities, respiratory muscle training and airway clearance techniques

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1Lung and Allergy Research, University of Timisoara, Romania; 2Physical Therapy Department, West University of Timisoara, Physical Education and Sport Faculty, Timisoara, Romania; 3Physical Rehabilitation, Victor Babes University of Medicine, Timisoara, Romania; 4Department of Gynecology, Victor Babes University of Medicine, Timisoara, Romania. Management in Public Nurishment and tourism, USAMVT, Timisoara, Romania

Research questions: Are any multifactorial intervention's useful to increase physical activity in cystic fibrosis (CF) teenagers? Can one combine physical exercise and physiotherapy techniques? What are the results of such an intervention on the quality of life in the CF patients? What are the results of lung function, quality of life and physical activity after a two years intervention?

Methods: This prospective study was conducted in the Romanian Cystic Fibrosis Centre and included a number of 40 patients, aged between 12 and 18 years. We have used classic techniques of clearance in the daily physiotherapy: the active cycle of breathing techniques, autogenic drainage, oscillating PEP, high frequency chest wall oscillation (5 times a week), sport programmes (2-4 times a week) and RMT (3 times a week using TrainAir computer system). We have evaluated at baseline and after 24 months of intervention the quality of life (using CFQOL questionnaire) and functional respiratory parameters FVC, FEV1, FEF25-75%. The statistical processing of data was made using a non-parametric test: the Wilcoxon matched pairs test.

Results: On a long-term we noticed a substantial improvement in the clinical outcomes (less acute respiratory hospitalization and medication) and CFQOL scores. We also noticed significant statistical difference (p<0.05), from initial vs. final evaluation in the functional respiratory parameters.

Conclusions: All cystic fibrosis patients should be encouraged to combine airway clearance techniques with respiratory muscle training and sport activities for better clinical outcome.

Acknowledgements: This paper was supported by a research grant from UEFIS-CDI Romania, code TE 36.

P609 Observation cohort study of outcome of patients referred to a UK regional weaning centre

Thomas Sanctuary1, Denise Camilleri1, Sam Goodhand, Natalie Grey1, Kelly Stewart1, Craig Davidson1, Nicholas Hart1,2,3,1Lone Fox Unit, Guy’s and St Thomas’ NHS Foundation Trust, London, United Kingdom; 2Department of Asthma, Allergy and Respiratory Science, Division of Asthma, Allergy and Lung Biology, King’s College London, United Kingdom; 3Guy’s and St Thomas’ NHS Foundation Trust and King’s College London, London, United Kingdom

Purpose: To describe the efficiency of combined physiotherapy techniques: clearance techniques, respiratory muscle training (RMT) and sport activities, in order to improve clinical outcomes and quality of life in cystic fibrosis (CF) patients referred to a UK regional weaning centre.

Method: This prospective study was conducted in the Romanian Cystic Fibrosis Centre and included a number of 40 patients, aged between 12 and 18 years. We have used classic techniques of clearance in the daily physiotherapy: the active cycle of breathing techniques, autogenic drainage, oscillating PEP, high frequency chest wall oscillation (5 times a week), sport programmes (2-4 times a week) and RMT (3 times a week using TrainAir computer system). We have evaluated at baseline and after 24 months of intervention the quality of life (using CFQOL questionnaire) and functional respiratory parameters FVC, FEV1, FEF25-75%. The statistical processing of data was made using a non-parametric test: the Wilcoxon matched pairs test.

Results: On a long-term we noticed a substantial improvement in the clinical outcomes (less acute respiratory hospitalization and medication) and CFQOL scores. We also noticed significant statistical difference (p<0.05), from initial vs. final evaluation in the functional respiratory parameters.

Conclusions: All cystic fibrosis patients should be encouraged to combine airway clearance techniques with respiratory muscle training and sport activities for better clinical outcome.

Acknowledgements: This paper was supported by a research grant from UEFIS-CDI Romania, code TE 36.
Mortality has decreased by 12% compared to previous data (Pilcher et al Thorax 2005). Mortality is lowest in the NMD and other neurological conditions groups. Complete ventilator independence was most common in the COPD and post surgery groups. The data indicates improved survival and weaning success in the group admitted to the LPU compared to those accepted but not transferred.

P610
The impact of COPD care bundles on compliance of care in northwest London
Laura Lemos1,urvashi Sharma, Hannah Mugsrage, Medicine, Imperial College, NIHR CLAHRC for Northwest London, London, United Kingdom

Background: Chronic Obstructive Pulmonary Disease (COPD) is one of the most common respiratory diseases in the UK, causing around 25,000 deaths a year and with a large portion of patients not receiving ideal care for COPD exacerbations. Care bundles, a sequence of evidence based interventions, have been identified as a way of delivering consistent patient care.

Aims: National Institute for Health Research (NIHR) Collaboration for Applied Health Research and Care (CLAHRC) for Northwest London implemented COPD discharge care bundles across 7 sites over 18 months (beginning in April 2009) to improve compliance to existing evidence based interventions.

Methods: The COPD discharge care bundles initially included smoking cessation, pulmonary rehabilitation, patient information on self-management, inhaler technique training, and follow-up appointment. Each of the sites adapted the bundle according to available resources and local settings. Weekly data on compliance was entered into a web reporting tool.

Results: The results from the data showed that 1052 patients were discharged with the care bundle, 668 of these patients were discharged having received all the elements of the care bundle (63.5% were fully-compliant). The bundle element with the lowest compliance was entered into a web reporting tool.

Conclusions: This study reveals aspects that impact compliance of care with COPD care bundle elements. The findings offer valuable lessons to future sites interested in implementing COPD care bundles and should be considered in order to improve COPD care.

P611
COPD acute exacerbation care self-audit in public hospitals in Catalonia (MAG-1)
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Background: Chronic obstructive pulmonary disease (COPD) exacerbations are known to reduce physical activity, but little is known about their effect on sleep. The Leicester Cough Questionnaire (LCQ) as a cough-specific HRQL measure in COPD is well established.

Aims: To carry out a self-audit to survey the quality of care provided to patients admitted with Chronic Obstructive Pulmonary Disease (COPD) acute exacerbation.

Methods: All 48 acute hospitals with chest unit in Catalonia were invited to complete a retrospective clinical self-audit comprising up to 40, 30 or 20 consecutively admitted episodes of COPD exacerbation (according to the size of the hospital area). The study was carried out beginning on April 2009.

Results: 2,174 patients were included from 42 hospitals. Eight patients were excluded because they did not have all data recorded. A total of 2,166 patients were included in the study. The patients’ mean age was 72.5 years (IQR= 65-74). Inpatient (4.4%) and 90 days (4.4%). Readmission rate (RR) at 90 days: 23%. Mean length of stay (LOS): 8 days (SD±7). A significant variation was observed between the 3 hospitals groups: 8.1 (SD±6.9) vs 6.9 (SD±4.4) vs 7.8 (SD±6.2) (p<0.05). There were no significant differences in inpatient mortality but there were significant differences in 90 day hospital RR (26% vs 23% vs 16%, p<0.045) and 90 day mortality (4% vs 5% vs 8%, p=0.050). In the discharge report there was information on smoking habit (35%, in smokers’ patients), ABG room air (18%) and lung function (52%).

Conclusion: We observed a considerable variation in the care provided between hospitals with a high variability in LOS, 90 day RR and 90 day mortality. The information in discharge report should be improved.

P612
Effect of cough on health-related quality of life in COPD
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Background: Current disease-specific health related quality of life (HRQL) measures in COPD focus on symptoms such as breathlessness, fatigue, mastery and social disease aspects. HRQL is known to be affected in idiopathic cough patients, and there are limited data on cough in COPD patients, although the given the reported prevalence of cough in COPD, determining its effect on HRQL is justified.

Aim: Determine the relationship between cough and HRQL in COPD.

Method: Consecutive, unsellected participants with COPD were recruited from outpatient clinics. Those who met eligibility criteria completed a set of questionnaires; COPD Assessment Questionnaire (CAT) to determine the presence of cough. The Leicester Cough Questionnaire (LCQ) as a cough-specific HRQL measure and Cough Visual Analogue Scale (VAS) to indicate self-reported cough severity.

Results: Forty participants were recruited. Baseline demographics showed a mean (±SD) age of 65.2 (±11.9) years, mean (±SD) FEV1% predicted of 49.0% (±18.6), the majority of the sample was of Caucasian background (80%) and the group was well matched in terms of gender (M:F, 22:18). Median (IQR) CAT cough score (5) was shown to be 3.2 (3.5), no participant selected 0 which would indicate ‘no cough at all’. Mean (±SD) VAS score 15.0 (±7.0). Median (IQR) LCQ scores (2/1) were found to be 16 (11.8-18.6), for the group as a whole with the physical domain showing the poorest score of all domains. Median LCQ score decreased with an increasing CAT score. A significant inverse relationship was evident between median LCQ score and VAS (r = -0.70, p<0.0001).

Conclusions: Cough was prevalent in a cohort of stable COPD patients with moderate to severe disease severity. Furthermore, increasing cough severity is associated with greater impairments in HRQL.

P613
Physical activity and sleep duration following hospitalisation with exacerbation of COPD vs. stable COPD & age matched controls
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Background: Exacerbations are known to reduce physical activity, but little is known about their effect on sleep.

Aim: This study measures physical activity and sleep quantity in patients recovering at home following hospitalisation for a COPD exacerbation and compares them with stable COPD patients and controls.

Methods: We recruited 23 COPD patients immediately following hospital admission for exacerbation (Acute), 34 stable COPD patients (Stable) and 19 age-matched people (Control). Physical activity and sleep duration were measured using accelerometers.

Abstract P613 – Table 1

<table>
<thead>
<tr>
<th>Description</th>
<th>Control</th>
<th>Stable</th>
<th>Acute</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sleep (hr, min)</td>
<td>6hr 52min ± 55min</td>
<td>6hr 56min ± 1hr 1min</td>
<td>6hr 23min ± 1hr 4min</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Walking (hr, min)</td>
<td>7hr 12min ± 1hr 38min</td>
<td>4hr 22min ± 1hr 58min</td>
<td>2hr 4min ± 1hr 51min</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Lying (hr, min)</td>
<td>1hr 35min ± 51min</td>
<td>1hr 1min ± 1hr 10min</td>
<td>1hr 50min ± 1hr 5min</td>
<td>0.57</td>
</tr>
<tr>
<td>Resting (hr, min)</td>
<td>10hr 17min ± 1hr 20min</td>
<td>10hr 46min ± 2hr 1min</td>
<td>1hr 2min ± 1hr 2min</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>PdL</td>
<td>1.5±0.2</td>
<td>1.4±0.2</td>
<td>1.4±0.2</td>
<td>0.10</td>
</tr>
<tr>
<td>Daily step count</td>
<td>5581±3475</td>
<td>5062±3124</td>
<td>3062±3124</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Step Rate (per min)</td>
<td>206±6</td>
<td>206±6</td>
<td>206±6</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

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using a SenseWear Pro armband for 6 consecutive days. Average number of steps, time lying, walking, sleep and resting were calculated per day. Physical activity level (PAL) was calculated by dividing total energy expenditure by resting energy expenditure. Step rate was calculated by dividing steps by walking time.

Results: The mean FEV1 at discharge was 39±14% pred. Activity levels are tabulated.

<table>
<thead>
<tr>
<th>Daily activity</th>
<th>Acute</th>
<th>Recovered</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sleep (hr, min)</td>
<td>5h 41min ± 2h 42min</td>
<td>6h 36min ± 2h 2min</td>
<td>0.04</td>
</tr>
<tr>
<td>Walking (hr, min)</td>
<td>2h 59min ± 2h 41min</td>
<td>3h 25min ± 2h 6min</td>
<td>0.14</td>
</tr>
<tr>
<td>Lying (hr, min)</td>
<td>1h 54min ± 1h 15min</td>
<td>1h 54min ± 1h 15min</td>
<td>0.42</td>
</tr>
<tr>
<td>Resting (hr, min)</td>
<td>13h 32min ± 2h 44min</td>
<td>11h 59min ± 2h 35min</td>
<td>0.01</td>
</tr>
<tr>
<td>PAL</td>
<td>1.4 ±0.2</td>
<td>1.4 ±0.2</td>
<td>0.53</td>
</tr>
<tr>
<td>Daily step count</td>
<td>3353 ±1308</td>
<td>4747 ±4888</td>
<td>0.03</td>
</tr>
<tr>
<td>Step Rate (per min)</td>
<td>10 ±0.8</td>
<td>19 ±10</td>
<td>0.08</td>
</tr>
</tbody>
</table>

Groups were compared using paired t-test. On recovery patients rested more, slept less than when first discharged.

Conclusion: 3 months after hospitalisation COPD patients slept and exercised significantly more and rested less when than first discharged.

P615
Lung aging in morbid obesity and the relationship with pulmonary volumes
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Introduction: Few researches focus on the behavior of lung aging in relation to morbid obesity.

Objective: The objective of this study was to investigate the influence of morbid obesity in the lung age in women and correlate to anthropometrics and ventilatory variables.

Methods: Cross-sectional study with morbidly obese (BMI≥40kg/m²) and control group consisting of normal weight women with BMI 18.5 to 24.90±2. The subjects performed a pulmonary function test to determine lung age and the results were correlated to lung volumes.

Results: 72 women with morbid obesity (BMI: 45.8±5.4 kg/m²) and a control group of 37 lean women (BMI: 22.7±1.9 kg/m²) were evaluated. The morbidly obese had significantly higher lung age (50±6.8 years) than lean women (38±11.4 years). There was no difference between chronological age of morbidly obese women (34±7.6 years) and lean women (34±6.8 years) respectively. There was a negative correlation among forced vital capacity (FVC), forced expiratory volume in one second (FEV1), FVC/FEV1 ratio, expiratory reserve volume (ERV) and lung age respectively (r = -0.7565, -0.8769, 0.2723, -0.2417).

Conclusion: Lung age is increased in morbidly obese and it is associated to decreased lung volumes. The calculation of lung age can be recommended for the morbidly obese to highlight pulmonary complications of obesity.
at HH can be useful to improve functional capacity and quality of life in those patients. Nevertheless, to assess exercise tolerance at home is complex. The modified Glittre ADL-Test is a measure of functional status that we have adapted to patient’s home.

Objective: Analyze the modified Glittre ADL-Test as a tool to measure exercise tolerance during an AECOPD at HH.

Method: 17 AECOPD patients, 15 males (median (ICR): 66 (60-84) years, FEV₁ 38% (29-44) predicted) attended at HH accepted to participate and completed 3 visits (V₁: HH discharge, V₂: 10 days post discharge, V₃: 1 month post discharge).

Outcomes: 1) Modified Glittre ADL-Test: laps (n), VO₂ and VE; 2) COPD Assessment Test; 3) MMRC and London Chest Activities of Daily Living (LCADL); 4) Modified Baecke (V₁ and V₃); 5) Handgrip.

Results: Modified Glittre ADL-Test laps increased (4 vs 5 vs 5, $p < 0.005$), VO₂ per lap (242 vs 229 vs 177 mL/min, $p < 0.03$) and VE per lap decreased (7 vs 7 vs 5 L/min, $p < 0.01$). CAT (18.5 vs 11.5 vs 12, $p < 0.01$), MMRC (2 vs 1.5 vs 1, $p < 0.01$) and Modified Baecke (4 vs 14, $p < 0.01$) also significantly improved between each assessment. There were no differences in Handgrip or LCADL.

Conclusion: Modified Glittre ADL-Test was suitable to measure exercise tolerance following an AECOPD attended at patient’s home.

P619
Six minute walking test in chronic respiratory failure: Which reflects the patient clinic status, walking distance or %predicted value?
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Aim: Six minute walking test (6MWT) values are limited for the patients who has been prescribed noninvasive mechanical ventilator due to chronic respiratory failure (CRF). We aimed to answer either walking distance (WD) or % predicted value better reflects the respiratory function of the patients who use home mechanical ventilators (HMV) due to CRF.

Methods: 6MWT is performed in patients during June-December 2011 who were already using HMW due to CRF and followed in our polyclinic. WD, ideal and lower limit of normal WD according to gender, age, BMI and % predicted of ideal values were calculated. Parameters that recorded during standart 6MWT and %predicted values were compared according to arterial blood gas (ABG), spirometry values and concomitant diseases.

Results: Correlation of WD and %predicted values for spirometry and ABG values of 144 patients were shown in Table 1.

Table 1

<table>
<thead>
<tr>
<th>Parameter</th>
<th>WD (m)</th>
<th>%predicted (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$r$</td>
<td>0.44</td>
<td>0.44</td>
</tr>
<tr>
<td>$p$</td>
<td>0.001</td>
<td>0.001</td>
</tr>
</tbody>
</table>

Patients diagnoses were grouped as COPD, OHS, kyphoscoliosis and parenchymal lung diseases and their 6MWT were compared in Table 2.

Table 2

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>COPD, 38</th>
<th>OHS, 32</th>
<th>Kyphoscoliosis, 23</th>
<th>PAH, 31</th>
</tr>
</thead>
<tbody>
<tr>
<td>6MWT (m)</td>
<td>316 (226-300)</td>
<td>303 (240-362)</td>
<td>420 (318-462)</td>
<td>333 (273-372)</td>
</tr>
<tr>
<td>$p$</td>
<td>0.002</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ideal 6MWT (m)</td>
<td>527 (495-585)</td>
<td>408 (353-491)</td>
<td>605 (566-692)</td>
<td>491 (450-590)</td>
</tr>
<tr>
<td>$p$</td>
<td>0.001</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Conclusion: Predicted % values of 6MWT are better correlated with respiratory functions than WD for patients who use HMV due to CRF.