499. COPD exacerbation

P4809

Clinical characteristics and determinants of exacerbation in Japanese patients with COPD: Hokkaido COPD cohort study results

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Introduction: Exacerbations are one of the major factors that may influence natural history of COPD. However, little is known about clinical characteristics and determinants of exacerbation of COPD in a Japanese population.
Aim: To examine characteristics and determinants of exacerbation in Japanese patients with COPD in a 5-year observational cohort study.
Methods: A total of 279 patients with COPD participated in the Hokkaido COPD cohort study (AJRCCM 2012) and 268 subjects (GOLD 1, 26%; GOLD 2, 45%; GOLD 3, 24%; GOLD 4, 5%) who had clinical data of multiple visits were analyzed for this analysis. Exacerbation was defined in four ways: symptom criteria, requiring prescription change (prescription criteria), requiring antibiotics treatment (antibiotics criteria), and requiring hospital admission (admission criteria). Exacerbation frequency was observed over a period of 5 years.
Results: Exacerbation event frequency was 0.24±0.47/yr (symptom criteria), 0.20±0.43/yr (prescription criteria), 0.13±0.28/yr (antibiotics criteria), and 0.06±0.19/yr (admission criteria). Cox proportional hazard model showed that an increase in SGRQ total score was significantly associated with short exacerbation-free period defined by all criteria and a decrease in body mass index (BMI) was also associated with short exacerbation-free period defined by antibiotics and admission criteria. Subjects who experienced hospital admission >1/yr tended to have rapid annual decline in FEV_1 (p=0.07).
Conclusion: While exacerbation frequency is low in our cohort subjects, poor health-related quality of life and low BMI are independent risk factors for the development of exacerbation of COPD.

P4810

Is controlled oxygen therapy in COPD patients presenting in acute respiratory failure sub-optimal prior to commencement of NIV?

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Introduction: Controlled oxygen delivery with target oxygen saturations is a key aim in managing COPD patients in respiratory failure.
Aims: This audit assessed if controlled oxygen therapy is utilised on these patients on admission to hospital and prior to NIV in line with British Thoracic Society guidance.
Methods: In a district general hospital, case notes for twenty patients with COPD requiring NIV between April 2011 - February 2012 were analysed retrospectively. FIO2, SpO2 and arterial blood gas values (pH, PaO2, PaCO2 and HCO3) were analysed on admission and prior to commencing NIV (if not started immediately on admission). SpO2 >94% and/or PaO2 >9 kPa were used to indicate 'relative overoxygenation'.
HCO3 > 26 mmol/L on admission was taken to suggest chronic hypercapnia and risk of oxygen sensitivity.
Results: 65% of patients were admitted with 'relative overoxygenation' (Figure 1)

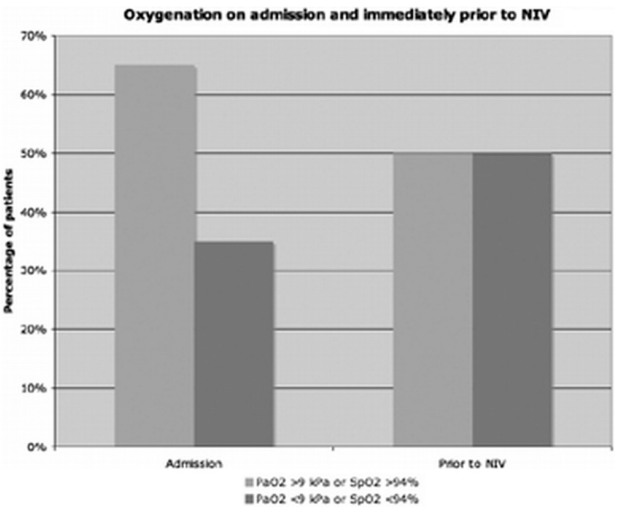

Figure 1

of which 54% were immediately started on NIV. However in 46% of patients not immediately started on NIV, over 80% had *attempted* reduction in oxygenation. 85% of patients had elevated bicarbonate on admission.
Conclusion: This audit found 'relative overoxygenation' in the majority of our patients on admission to hospital with some correction prior to NIV. Efforts to limit initial overoxygenation may reduce need for NIV in some patients and should be reinforced to first responders.

P4811

Impact of diabetes in patients admitted with acute exacerbation of COPD

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Background: In patients admitted with acute exacerbation of COPD (AECOPD), the presence of concomitant diabetes has been shown to prolong the length of stay (LOS) and increase the risk of death. However, it is not clear if this impacts on readmission rates.
Methods: A retrospective study of consecutive patients admitted with AECOPD in an acute teaching hospital.
Results: 67 patients (45% male) with a mean (SD) age of 72 (12) years and % predicted FEV1 of 55 (20) were included in the study. 15 (22%) of them had concomitant diabetes with a mean (SD) HbA1C of 6.8 (1.3).

Baseline characteristics and outcome parameters

	COPD without DM (N=52)	COPD with DM (N=15)	p value
Age	71 (13)	76 (9)	0.25
% predicted FEV1	55 (20)	55 (23)	0.95
Admission serum glucose, mmol/L	6.4 (1.5)	8.8 (3.4)	0.0002
Median (IQR) length of stay, days	6.5 (3.5–10)	7 (2.5–9.5)	0.22
No. of admissions in the following 1 year	1.6 (2)	2.7 (2.7)	0.05
Mortality within 1 year, no. (%)	11 (21%)	3 (20%)	0.93

Values presented as mean (SD) unless otherwise stated.

No significant difference in LOS or mortality within one year was noted between the two groups. However, there was a trend for increased readmission rates in the following year in patients admitted with AECOPD and concomitant diabetes.
Conclusions: Our study suggests that the presence of DM might have an impact on readmission rates following a hospital admission with AECOPD. Prospective studies with larger sample size are needed to evaluate this further.

P4812

The prognostic value of elevated levels of troponin I (Tn I) and heart-type fatty acid binding protein (H-FABP) in hospitalized COPD patients with acute respiratory failure (ARF)

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Aim: To evaluate the diagnostic and prognostic value of heart injury biomarkers (H-FABP and Tn I) in COPD patients with ARF.
Methods: We enrolled 80 hospitalized patients with COPD (65,6±18,9 years, PaO2 53.8±7.2 mm Hg). All patients underwent a complex diagnostic investigation including chest X-ray, blood gases, echocardiography, measurement of serum Tn I, H-FABP, BNP-fragment.
Results: The main causes of ARF were bacterial infection (BI)-43,7%, pneumonia-32,5%, acute decompensation of chronic heart failure (ADCHF)-12,5% and acute myocardial infarction (AMI)-11,3%. The H-FABP levels >1600 pg/mL were in 92.5% of all cases. Patients with AMI had the higher levels of H-FABP than patients with BI (9948,2 [4166,7-25000] vs 3720,0 [2620,1-5553,3] pg/mL, p<0,05), there were no significant differences between other groups. The Tn I levels were elevated (>0,5 ng/mL) in 21,3% of all cases without significant differences between groups. BNP-fragment levels were higher in patients with pneumonia, ADCHF, AMI than in patients with BI (967,7 [453,7-2916,6], 2458,1[960,5-4869,2], 1939,6[982,2-2361,1] vs 463,7[306,8-1013,2] fmol/mL, p<0,05 for all, respectively]. The areas under ROC curve for the prediction of hospital mortality were increased for BNP-fragment (0,827), for H-FABP (0,809). Survival was worse in patients with elevated Tn I >0,5 ng/mL than in patients with Tn I <0,5 ng/mL (log-rank test, p<0.01).
Conclusion: In COPD patients with ARF the serum levels of Tn I and H-FABP were significantly elevated without documented acute coronary syndrome and were the strong predictors for all-causes hospital mortality.

P4813

Regulation of ghrelin on appetite in patients with acute exacerbations of chronic obstructive pulmonary disease

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Background: Patients with COPD are usually complicated with malnutrition, which is partly caused by reductions of appetite and food intake, especially

in acute exacerbations. Recent studies reported the key roles of ghrelin in appetite stimulation and energy homeostasis. However, the association between the orexigenic function of ghrelin and appetite reduction in AECOPD remains unclear.
Objectives: To investigate the secretion, acylation of ghrelin, and its association with appetite reduction in patients with AECOPD.
Methods: Thirty-six patients with AECOPD and 23 healthy adults were enrolled. Total and acylated ghrelin, obestatin, simplified nutritional appetite questionnaire (SNAQ) scoring, and calorie intake were compared in patients between in exacerbations and in remissions. Further more, the same indexes were also compared between AECOPD patients and healthy controls.
Results: Total ghrelin level in patients was significantly higher in exacerbations than remissions (627.2±234.9 vs. 500.8±181.0 pg/ml, p=0.001), while the SNAQ score and calorie intake were significantly lower (10.8±2.3 vs. 14.3±1.8, p<0.001; 663.5±188.3 vs. 1031.4±188.9 kcal, p<0.001, respectively). The proportion of acylated ghrelin, the SNAQ score, and calorie intake of patients were significantly lower than controls (10.6±6.7% vs. 15.0±5.9%, p=0.003; 10.7±2.1 vs. 15.4±1.2, p<0.001; 647.1±164.4 vs. 1257.7±228.0 kcal, p<0.001, respectively).
Conclusions: A higher ghrelin level in AECOPD indicated increased secretion of ghrelin, but its role in stimulating appetite was compromised. Moreover, the decreased acylation of ghrelin was noted in patients, which might be a cause for appetite reduction in AECOPD.

P4814
Cardiac biomarkers and outcome in patients with acute exacerbation of chronic obstructive pulmonary disease
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Purpose: Cardiac biomarkers are associated with prognosis in patients with chronic obstructive pulmonary disease (COPD). The optimal timepoint for biomarker analysis remains uncertain thus we compared prognostic implications of admission and discharge concentrations with outcome after acute exacerbation of COPD.
Methods: This was a prospective study in patients hospitalized with acute exacerbation of COPD. We measured NT-proBNP and troponin T (TnT) concentrations at admission and discharge. Hospitalizations and deaths were recorded for 6 months after discharge.
Results: We included 127 patients (70±10 years, 70% men, GOLD III/IV 87%). Left ventricular ejection fraction was <50% in 11 (9%) patients and 96 (76%) patients had signs of diastolic dysfunction. At admission, NT-proBNP and TnT were elevated in 76 (60%) and 35 (28%) of patients, respectively. By discharge, this decreased to 46 (36%) and 24 (19%) patients. During follow-up, 44 (35%) patients were rehospitalized and 10 (8%) died. Kaplan-Meier curves analysis showed association between TnT at discharge and rehospitalizations (log-rank test 5.74, p=0.017). In a Cox model of proportional hazards adjusted for age, gender, GOLD stage, and left ventricular function, only TnT at discharge remained associated with rehospitalizations (hazard ratio 2.89, 95% confidence interval 1.13-7.36). No associations between admission and discharge concentrations of NT-proBNP, TnT and death were found.
Conclusions: Cardiac biomarkers are frequently elevated in patients hospitalized for acute exacerbation of COPD. Discharge TnT was predictive of rehospitalizations whilst none of the biomarkers predicted death during 6 months.

P4815
Predicting hospital readmission in patients discharged following acute exacerbations of COPD (AECOPD)
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Background: Readmission rates following hospitalisation for AECOPD are high. The ability to accurately identify patients at a high risk of readmission could help clinicians effectively direct resources and interventions.
Objective: To identify predictors of readmission in patients surviving hospitalisation for AECOPD.
Method: Clinical data from consecutive patients surviving hospitalisation for AECOPD were collected. All variables associated (p<0.10) with outcome (readmission to hospital, or death at home without readmission, within 90 days of discharge) on univariate analysis were entered in to a multivariate logistic regression analysis.
Results: 824 patients were recruited: mean (SD) age = 72.3 (10) years; 54.2% were female; mean (SD) FEV_1 = 44.0 (17.4) % predicted; and median (IQR) length of stay = 6 (4 to 11) days.
37.3% of patients were readmitted or died within 90-days. The strongest three predictors of outcome were: stable state dyspnoea (measured using the extended MRC Dyspnoea Scale); the number of hospitalisations in the preceding year; and recent unexplained weight loss. The full regression model (table 1) showed good discrimination for 90-day readmission (AUROC = 0.751, 0.717 to 0.783).
Conclusion: Hospital readmission is common and implementation of these simple prognostic indices may help identify and manage those at a high risk of poor outcome.

Table 1. Independent predictors of readmission

Variable	Odds ratio (95% CI)	p value
eMRCD	1.69 (1.42-2.02)	<0.001
Admissions in the previous year	1.32 (1.18-1.48)	<0.001
Recent weight loss	1.66 (1.15-2.40)	0.007
Cor pulmonale or pedal oedema	1.56 (1.11-2.18)	0.010
Preadmission social care	1.62 (1.07-2.44)	0.021
Serum glucose, mmol/L	0.93 (0.87-1.00)	0.0402

P4816
Association of post-traumatic stress disorder and number of exacerbations in COPD patients
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Background: Post-traumatic stress disorder (PTSD) is a common psychological consequence of exposure to traumatic stressful life events. There is an association of trauma exposure and PTSD with airflow limitation that could be mediated by inflammatory processes. During COPD exacerbations, dyspnea described as a suffocation, can be considered a near-death experience, which can lead to PTSD. The aim of this study was to evaluate the relationship between exacerbations and PTSD.
Method: Thirty-six COPD inpatients with exacerbation were screened regarding the following domains (and instruments): PTSD (Screen for Posttraumatic Stress Symptoms), anxiety (Beck Anxiety Inventory) and depression (Beck Depression Inventory). Patients had a mean age of 69.5±9.6 years and 69.4% were female.
Results: Mean FEV1 and FVC were 0.82±0.31 (37.8±14.7% of predicted) and 1.77±0.63 (61.7±18.2% of predicted), respectively with a mean exacerbation of 2.7 episodes over the past year. PTSD was found in 39.5% of patients (SPTSS mean score 7.1±4.4); moderate to severe depression in 63% (BDI mean score 21.6±12.6) and moderate to severe anxiety in 55% (BAI mean score 23.1±12.6). In a linear regression model, exacerbations significantly predicted PTSD scores: each exacerbation increased 1.34 points in SPTSS scores; F(34)=9.29; p=0.004. Significant correlations were detected between PTSD and anxiety (rs=0.61; p<0.001) and PTSD and depression (rs=0.68; p<0.001).
Conclusion: PTSD symptoms increase as the patient's exacerbations number increases and respiratory function worsens. Overall, these findings suggest that psychological domains should be addressed along with respiratory function and exacerbations in COPD patients.

P4817
Impact of patient nutritional status on acute exacerbation of COPD
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Intoduction: Nutritional status has to be considered in the course of COPD. In fact, both obesity and malnutrition influences quality of life of patients with COPD and has a prognostic value.
Aim: Evaluate the impact of patient nutritional status on acute exacerbation (AE) of COPD.
Patients and method: Retrospective study including patients hospitalized for AE of COPD between 2009 and 2010 in our department. Nutritional status was evaluated by body mass index (BMI). Patients were divided into four groups regarding their BMI (*G1:* BMI<18; *G2:* 18,5≤BMI≤24,9; *G3:* 25≤IMC≤29,9; *G4:* IMC≥3O). Number of AE/year, duration of hospitalization and use of systemic corticosteroids were also determined.
Results: Fifty patients were enrolled with a mean age of 64 years. Mean value of weight and BMI was respectively 66,93 kg and 23,63 kg/m^2. 50% of patients had COPD stage III and 28% had COPD stage IV. Considering all patients, mean value of AE/year was 1.5, mean duration of hospitalization in AE was 15,49 days and use of systemic corticosteroids was necessary in 66% of cases. Compared to patients with normal BMI (G2), those with malnutrition (G1) had more severe AE: longer duration of hospitalization (35,48days vs14,45days) and frequent use of corticoids (83, 33% vs 64,28%). Patients suffering from obesity had similar number of AE/year as patients from G2, but the use of corticosteroids was more frequent (85,71% vs 64,28%).
Conclusion: We emphasize on the evaluation of nutritional status in COPD as a major parameter to consider in the management of this disease.

P4818

Can acute phase proteins predict survival in ventilated patients with acute exacerbation of COPD?

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Background: Factors determining in-hospital mortality of patients ventilated with acute exacerbations of chronic obstructive pulmonary disease (AECOPD) are not precisely understood.
Purpose: The aim of this study was to assess the correlation between acute phase proteins [High sensitivity C-reactive protein (CRP) and prealbumin (PA)] and mortality in ventilated patients with COPD.
Methods: We evaluated 336 COPD patients with AECOPD and on invasive mechanical ventilation. Detailed clinical evaluation was done daily. Concentration of CRP and PA was measured on admission, 3rd, 8th and 16th day.
Results: During the study; 237 patients were discharged and 99 died. The difference between the two groups in CRP and PA was significant at admission, 3rd, 8th day and 16th day. In non survivors; there was a significant increase in CRP values with a significant decrease in PA with time ($P<0.001$). In-hospital mortality was significantly associated with lower arterial oxygen tension, higher carbon dioxide arterial tension, lower arterial oxygen saturation, lower body mass index and longer hospital stay.
Conclusions: CRP levels in patients who died was significantly higher on admission, 3rd, 8th and 16th day. A fall in CRP levels on follow up indicated a significantly better prognosis. An increase in the prealbumin level was observed in survivors.
Clinical implications: Persistently high CRP and low prealbumen in COPD patients on ventilator is associated with poor prognosis. Aggressive treatment of systemic inflammation and malnutrition may improve prognosis. Prediction of survival status may be enhanced by considering arterial oxygen tension, albumin, body mass index, duration of hospitalisation.

P4819

A comparison of specific health- related quality of life questionnaires to predict COPD exacerbations

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Objectives: Compare the COPD specific health-related quality of life (HRQoL) instruments, St George respiratory Questionnaire (SGRQ), Chronic Respiratory Questionnaire (CRQ), Clinical COPD Questionnaire (CCQ) and Airways Questionnaire 20 (AQ20) to predict COPD exacerbations.
Methods: One hundred COPD patients who completed SGRQ, CRQ, CCQ and AQ20 were followed for 2 years. Emergency visits and hospitalizations were collected.We also assessed sociodemographic, clinical and pulmonary function data. The chi-squared, t test, and Mann-Whitney U were used to compare differences between groups. Multivariate logistic regression was performed for all variables showing statistically significant differences. A p-value< 0.05 were considered significant.
Results: The mean (SD) age was 65.9 (8.4) years and the mean FEV1 was 59.1 (19.5) % of predicted value. In the univariate analysis only CCQ questionnaire showed differences for patients with emergency visits in the first year. Significant differences were seen in the scores of the CCQ, total score SGRQ and all subscales, except SGRQ symptoms, and the scale disease control of CRQ between the group with hospitalization in the first year. In the logistic regression model, the CCQ questionnaire finally proved to be independent predictor of emergency visits during the first year (OR: 1.06; 95% CI, 1.00 to1.11; p=0.036). Other variables significantly associated were BMI (0.87; p=0.04) and prior hospitalizations (OR: 1.79; p=0.01).
Conclusions: Among a wide range of HRQoL questionnaires only the CCQ are independently associated with a higher risk of emergency visits for COPD exacerbations the first year of follow-up.

P4820

30-days mortality in patients admitted with COPD

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Introduction: The aim of this study was to describe 30-days mortality after hospital admission for COPD.
Methods: This is a retrospective study of all patients with the diagnosis of COPD as a primary diagnosis or co-diagnosis admitted to a tertiary pulmonary treatment unit, Department of Respiratory Medicine, Gentofte Hospital, Denmark in 2010. The 30-days mortality is compared to the Danish National Indicator Project (NIP).
Results: 67 (15.1%) died out of 442 patients admitted with COPD within a period of 30-days after hospital admission, compared to 10% at the national level, odds ratio 1.51 (1.15 – 1.99). Mean age was 82.2 years, 55.2% were women and average BMI was 20.7. They had an average admission rate at 2.89 admissions in a period of 12 months prior to the inclusion date. Out of the 67, 23 (34.3%) received non-invasive ventilation (NIV) or respirator treatment at the respiratory unit or the intensive care unit. In 4 (5.9%) cases COPD was neither the cause of admission nor the cause of death, in further 18 (26.9%) cases COPD was not the cause of admission and 5 (7.5%) patients was wrongly diagnosed with COPD.
Conclusion: The 30-days mortality is significantly higher at Department of Respiratory Medicine at Gentofte Hospital. Possible explanations are a selection of hospitalization of more severe cases of COPD since the department has a unique outgoing COPD-treatment unit, which treats the milder exacerbations at home. Furthermore a mortality increase due to a selection of high risk patients with complications, comorbidities and pulmonary cancer in a tertiary unit. In conclusion, the crude 30-days mortality needs further data interpretation if to be used as a measurement for quality of treatment for patients admitted with COPD.

P4821

Influence of COPD exacerbations on health related quality of life

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Background: An exacerbation is the most important adverse event in the progression of chronic obstructive pulmonary disease (COPD). Exacerbations appear to accelerate the decline in lung function that characterizes COPD, resulting in reduced physical activity, poorer quality of life and an increased risk of death.
The aim of this study was to investigate the influence of chronic obstructive pulmonary disease exacerbations on health related quality of life (HRQL).
Methods: 152 consecutive patients with COPD were enrolled into the study. We measured demographics and spirometry. HRQL was assessed by the Medical Outcomes Study Short Form (SF-36) and the St. George Respiratory Questionnaire (SGRQ).
Results: The cohort consisted of 90 patients with 2 or less exacerbations per year, mean age 53±3.2 years and 62 patients with 3 or more exacerbations, mean age 55±3.8. In frequent exacerbators COPD was more severe: the mean FEV1% was 34.2±2.1% versus 52.3±2%, $p<0.05$. Grade of impairment of HRQL was higher in frequent than infrequent exacerbators: SGRQ (73.6±1.1 versus 57.1±1.6, $p<0.01$) and SF-36 (30.2±1.5 versus 41.1±1.2, $p<0.01$). Pearson correlation coefficient analysis demonstrates in COPD patients a significant positive correlation between the rate of exacerbations and the total scores of the SGRQ ($r=0.61$, $p<0.01$) and SF-36 ($r=0.54$, $p<0.01$).
Conclusion: Compared with infrequent exacerbators, frequent exacerbators in our study were characterized at baseline by more severe COPD and more severe deterioration of the health related quality of life.

P4822

Nutritional status of COPD patients with complete respiratory failure on long term home oxygen therapy

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Objectives: This study aimed in assessing nutritional status in patients with the advanced COPD, treated with long term home oxygen therapy.
Material and methods: A group of 49 patients with COPD, mean age 67 year, were included into the study. 43 patients smoked cigarettes in the past (91.5%). Body composition evaluation with bioelectrical impedance analysis (BIA) were performed in all patients. Body Mass Index (BMI) and Fat-Free Mass Index (FFMI) were calculated. FEV1 and FVC were measured. Life quality was assessed with St. George Respiratory Questionnaire (SGRQ).
Results: 17.7% of patients were diagnosed as underweight, in 22.3% the body weight was normal, 61,9% of patients were overweight or obese.
FEV1 value was the lowest in underweighed patients, and the highest in overweighed and obese patients. Strongly positive correlation between FEV1 and FFMI: $r=0.45$; $p<0.01$, was also noted.
Statistically significant differences between SGRQ total score and frequency of the undertaken physical activity were seen. In patients, who performed moderate exercises, e.g. walking once a week only, lower life quality was statistically significant (SGRQ Total Score=77.6) in comparison with the patients, who performed physical exercise thrice a week at least (SGRQ Total Score= 67.7) at $p<0.04$.
Conclusions: 1. Normal body weight was noted in 22.3% of patients with advanced COPD. Overweight and obesity are seen statistically significantly more often than underweight.
2. Respiratory system function are worse in patients diagnosed with malnutrition than that in patients that are overweight and obese.
3. Quality of life in patients more physically active is better than ones with lower physical activity.

P4823

Reducing hospital admission in COPD exacerbation by urgent oxygen provision and home monitoring of capillary blood gases

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Current NICE guidance recommends hospital admission when SpO2 < 90% but with supplemental oxygen many such patients might be managed at home provided that worsening hypercapnia and respiratory acidosis is excluded.
As part of the NHS Lung Improvement Programme, Sunderland Urgent Care Team (South Tyneside NHS Foundation Trust) set up a six month Pilot to reduce emergency hospital admission by introducing measurement of capillary blood gases (TcABGs) and the urgent provision of oxygen to manage what would have been an admission into a treatable condition at home. Following a clinical assessment, a team of advanced nurse practitioners guided by an operational protocol measured TcABGs in a group of patients with AECOPD who's SpO2 was in the range 85 -89%. Suitable patients were provided with oxygen cylinders delivering oxygen in the range of 2-6 L/min and monitored until oxygenation improved (SpO2 > 90%) and there was clinical recovery. Initially, urgent oxygen provision and ABG measurement proved problematic but 25 patients were recruited. 4 were excluded for breaching protocol (2 TcABGs failed, 1 was acidotic (pH 7.29) and chose to remain at home, 1 had no follow up data). 4 were admitted (2 acidotic, 2 hypoxic on LTOT). The remaining 16 hypoxic (SpO2 86% ± 1) patients improved (SpO2 93% ± 2) with urgent oxygen provision and were managed safely at home but 1 became non compliant. Initial visit times lasted 186.2±80.7 mins with between four and twelve follow up visits until recovery. With urgent oxygen provision, careful selection and monitoring, hospital admission can be avoided even in moderately hypoxic patients with exacerbations of COPD.

P4824

Comparison of different dosage nebulised budesonide in COPD exacerbation

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Objective: To compare the efficacy and safety of different dosage nebulised budesonide (NB) in the treatment of acute exacerbations of chronic obstructive pulmonary disease (COPD).
Design: Randomised, double-blind, parallel-group trial.
Patients and interventions: A total of 64 patients who had moderate to severe acute exacerbations of COPD and required hospitalisation were enrolled in the study. The patients were randomized into three groups. Group 1 received systemic (intravenous) prednisolone 40 mg daily (n= 28), group 2 received 4 mg NB daily (n=20), group 3 received 8 mg NB daily (n=18). Airway obstruction [forced vitale capacity (FVC), forced expiratuar volüme 1 second (FEV1)] was evaulated at admission and discharged. Arterial partial pressure of oxygen (PaO2), carbon dioxide(PaCO2), pH, and oxygen saturation (SaO2) were evaulated at 24 and 48 hours, and at day 10.
Results: There were no significant differences between groups at baseline. In groups, differences were significant for FVC,FEV1, PaO2, and SaO2 (p=0,000), but not for PaCO2 and pH, in comparison with their baseline values. There were no significant differences between groups for all parameters at all time periods. While blood glucose exhibited an upward trend only group 1 (8 patients), oral monoliazis and hoarseness were observed in group 2 and 3 (5 patient). But the differences were not statistically significant (p=0,69).
Conclusions: Nebulised budesonide is effective and safety in the treatment of COPD exacerbation. There is no significant difference in terms of efficacy and safety between 4 mg and 8 mg nebulised budesonide.

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COPD: Acute exacerbation (AE) and hospitalization rate (HR) in patients with different serum surfactant protein D (SPD) level

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Aim: To evaluate whether and in which extent SPD have influence on the AE and hospitalization rate in patients with COPD.
Study population: 26 patients with stable COPD, GOLD stage II-IV, made the study sample.
Methods: SPD was evaluated in serum by ELISA (Hycult Biotech, Netherlands) for all patients. AE (including AE, required systemic corticosteroids (SCS) and antibiotic (AB) prescription) and HR during 12 months were evaluated retrospectively by analysis of patient's medical documentation.
Results: In accordance with SPD level all patients were divided on two groups: 12 patients with SPD <600 ng/ml (Group I) and 14 – with SPD ≥600 ng/ml (Group II). Both groups were similar regarding to sex, age, FEV1, smoking status and basic therapy. One or more AE during the year were found in 7 (58.33%) patients of Group I and 12 (85.71%) – of Group II. The data from patient's medical documentation analysis are performed in the table 1.
Conclusions: 1. COPD patients with high SPD had higher AE rate and required more frequent both SCS and AB prescription.
2. SPD did not influence on HR in patients with COPD, GOLD stage II-IV.

Table 1

Group	AE (M±m, cases per year)	AE with SCS (M±m, cases per year)	AE with AB (M±m, cases per year)	HR (M±m, cases per year)
I	1.04±0.27	1.01±0.18	0.75±0.22	1.02±0.47
II	2.35±0.34*	2.17±0.35*	1.98±0.54$	1.68±0.34#

*p<0.01; $p<0.05; #p>0.05.

P4826

Relation between metabolic syndrome and acute exacerbation of COPD

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The concept of COPD as a systemic disease has been widely accepted in the past several years. However, to date, rare studies have analyzed correlation between exacerbations of COPD (ECOPD) and Metabolic Sndrome (MetS).
The aim of this study was to examine if presence of MetS increases the frequency, duration and severity of ECOPD.
Methods: Patients with COPD were prospectively enrolled and followed between January 2008 and December 2011. Medical records, pulmonary function tests, chest X-rays; laboratory test results were gathered to establish the presence of COPD and MetS. Patients were divided in two groups; with and without MetS. The ECOPD was defined as worsening of symptoms requiring increased use of rescue medications and/or need for either systemic steroids or antibiotics or that led to emergency room visit or hospitalizations during 36 months follow-up. A total of 100 patients were recruited, 60 with MetS and 40 without. The mean exacerbation of COPD frequency was 2 in MetS group versus 0.7 in the control group during the follow-up period ($P < 0.001$). Mean duration of each exacerbation was 8±1.5 days in patients with MetS versus 5,5±1.3 days in patients without. Acute respiratory failure was more frequent in patients with metS than control with significant difference. Serum C-reactive protein ($r = 0.3$, $P = 0.001$), fasting blood glucose ($r = 0.6$, $P < 0.001$), and triglycerides ($p = 0.01$) were positively and significantly correlated with exacerbation frequency. This study demonstrates an association between ECOPD and its duration and severity with the MetS. The systemic inflammation induced by common cytokines may explain the linkage between the two conditions.