82. COPD comorbidities I

P520

Chronic obstructive pulmonary disease (COPD) as comorbidity (CO) in different patient categories in a university hospital setting. A cross sectional study

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20% of the Danish adults suffers from COPD[1]. 50% of the patients are undiagnosed[1]. COPD patients have multiple CO[2].

To elucidate the frequency of COPD as CO among hospitalized patients. To investigate in which patient categories COPD is a frequent CO.

Aalborg University Hospital covers all medical and surgical specialities. A one day cross-sectional study was performed on patients > 18 years. A spirometry was performed. Smoking habits, prior lung function, prescribed lung medicine were recorded. Co-existing diagnoses were registered from case records.

Of 583 possible participants 194 couldn't/didn't wish to participate. 111 weren't present.12 were excluded. 215 participated, 28% (61/215) suffered from COPD (PC). 41% (25/61) of PC had 3 or more COs and 29% (45/153) patients without COPD (PwC) had 3 or more COs (p=0.05).

Table 1. Disease entities in which COPD was a frequent CO. Diagnoses found significantly more often in PC diagnosed at this examination than in general in hospital

	PC (61) %	PC, newly diagnosed (47) %	PwC (153) %
Cardiovascular diseases	20 (12/61)	21 (10/47)	26 (40/153)
Gastrointestinal Diseases*	21 (13/61)	28 (13/47)	11 (17/153)
Endocrine Diseases	20 (12/61)	23 (11/47)	24 (37/153)
Heamatologic diseases*	21 (13/61)	21 (10/47)	7 (10/153)
Uro-nefrologic diseases*	21 (13/61)	19 (9/47)	11 (16/153)
* 0.05			

*p< 0.05.

PC suffer from significantly more CO than PwC. Gastrointestinal-, heamatologic-, and uro-nefrolocic diseases were found significantly more often in PC diagnosed at this examination than in general.

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P521

Nutritional status and lipid parameters in COPD patients

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Aim of study was evaluation of nutritional status and lipid parameters in COPD patients and assessment the dependence between above.

114 COPD patients - 69 males (60,5%) and 45 females (39,5%) mean age 65,82, in different stages of the disease participated in the study. It was assessed nutritional status using bioimpedance method (Akern BIA 101) and concentrations of lipid

parameters in blood serum. Malnutrition was confirmed in 17 (14,91%) patients, more frequent among women than man (58,8% vs 41,2%). Between patients with decreased FFMI normal BMI was confirmed in 9 individuals. Deviations in the level of serum lipids was found in 43 participants (37,71%) and it was the most often hypercholesterolemia (33,3%) - in 6 (5,26%) patients hypercholesterolemia with hypertriglicerydemia and 5 cases (4,38%) of hypertriglicerydemia only.

FMI (fat mass index) didn't correlate with cholesterol serum level, as well as LDL and TAG levels; unlike the BMI, where weak correlation with cholesterol was noticed (p=0,02). FFMI correlated strongly with HDL cholesterol (p=0,004). Deviations in lipid profile in COPD patients are not exclusively connected with fat contents but may be the consequence of systemic disease.

P522

Triglycerides are associated with five-year mortality in COPD patients

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Background: Patients with chronic obstructive pulmonary disease (COPD) present systemic inflammation and the presence of metabolic syndrome (MS) can increase the risk of cardiovascular. However, the influence of the components of MS in survival of COPD patients has not been investigated.

survival of COPD patients has not been investigated. **Methods:** We followed 115 COPD patients (age:64.5±1.21years, FEV₁:58.7±2.75%) during five years and causes of death were noted. At baseline, patients' clinical history and physical examination were assessed, and anthropometric (weight, height, body mass index and waist circumference), spirometry, 6-minute walking distance (6MWD), dyspnea perception by the modified medical research council (MMRC), serum lipid profile and triglycerides measurements were performed. Severity of COPD according to BODE index was calculated. The diagnosis of MS was established by the harmonization criteria. The Cox proportional hazard analysis was used to evaluate the influence of the components of MS (triglycerides, HDL cholesterol levels, waist circumference, blood pressure, fasting glucose levels) in the survival time, adjusted for potential confounders (age, gender and BODE index).

Results: MS was present in 35.6% of patients and 17.0% of patients died during the period of the study. A increase of 100 mg in triglycerides was associated with 42% increase in the probability of death in the period (HR:1.42, 95%CI: 1.06-1.89). None of the others MS components were associated with mortality.

Conclusion: The prevalence of MS is high in COPD patients and higher value of triglycerides was the MS component associated with higher risk of five-year mortality in COPD patients.

P523

The differences of bone metabolism in males with chronic obstructive pulmonary disease and postmenopausal females

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It is proved that osteopenia and osteoporosis in postmenopausal (PM) females is a big social problem. It is also reported that bone disorders in males with chronic obstructive pulmonary disease (COPD) are more frequent than in population. But it is not completely clear whether frequency and degree of disorders in bone metabolism (BM) in males with COPD are so marked compared to PM females and what are the differences in their BM activity. The aim of the study was to compare BM activity in males with COPD and PM females.

The prospective cohort study was conducted. 33 males with COPD over 55 years old and 33 females without respiratory diseases over 55 were included. General examination, clinical and biochemical blood analyses, densitometry of lumbar spine and proximal part of left femoral bone, respiratory function test, osteocalcin and C-telopeptids blood levels examination have been performed to the patients. The prevalence of osteopenia and osteoporosis had no significant difference in two groups. Males with COPD had lower T-score for the femoral neck than PM females without pulmonary disorders of the same age, $-1,05\pm0,85$ SD and $-0,36\pm1,24$ SD respectively, p<0,05. Osteocalcin level in males with COPD was significantly higher and C-telopeptids level was significantly lower than in PM females, p<0,05. Therefore males with COPD have the same high prevalence of BM disorders as PM females. Osteoclasts in COPD patients seem to be more activated than in PM females, on the contrary osteoblasts activity is significantly depressed. Consequently it is necessary to use another approach for prevention and treatment of osteoporosis in patients with COPD.

P524

Prognostic value of the Charlson Comorbidity Index in patient with COPD <u>Nina Karoli</u>, Andrey Rebrov. *Hospital Therapy, Saratov State Medical University, Saratov, Russian Federation*

Few studies show patient outcomes over time in chronic obstructive pulmonary disease (COPD). The traditional pulmonary function test assessed by tge FEV1 is known to correlate poorly with dyspnea, health status and exercise intolerance. In the present study we evaluated by Charlson Comorbidity Index (CCI) as a predictive marker of death in patients with COPD.

A total 77 patients with COPD (mean age $54,93\pm0,63$ yrs) was monitored over 5 years in our study. COPD was diagnosed according GOLD criteria. During follow-up 18 patients (23.4%) died: 17 patients due to respiratory insufficiency and/or heart failure and 1 pts due to cancer.

Died patients with COPD had higher CCI than alive $(4,50\pm0,46 \text{ and } 2,44\pm0,17, p<0,001)$. Died patients with COPD had CCI >3 score more frequently than alive patients. We noted correlations between baseline CCI and time before patients died (r=-0.54, p<0.05).

Charlson Comorbidity Index in patient with COPD

	All pts (n=77)	Alive pts (n=59)	Died pts (n=18)
)-1	14 (18.2%)	14 (23.7%)	0
2-3	42 (54.5%)	37 (62.7%)	5 (27.8%)*
> 3	21 (27.3%)	8 (13.6%)	13 (72,2%)***

*p<0.05, ***p<0.001.

The Charlson Comorbidity Index has demonstrated good predictive validity in our study. In our opinion, the CCI represents the optimal balance between ease of use and prognostic ability. CCI> score was associated was poor prognoses in patients with COPD.

P525

Phenotypic characteristics of patients with arterial hypertension and chronic obstructive pulmonary disease

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Patients with combination of COPD with arterial hypertension (AH) have a worse clinical course, higher risk of cardiovascular events (CE) than AH without COPD. However, the specific phenotypic characteristics of such comorbidity is still unclear. **Objective:** To reveal clinical features, risk of CE in patients AH with and without COPD included in clinical trials.

Methods: A retrospective analysis of five clinical trials conducted in Russia from 2005 to 2010. The analysis included 3409 patients from 40 to 80 years with essential or isolated systolic AH. Age, sex, risk factors (RF), target organ damage (TOD), the presence of associated clinical conditions (ACC) were evaluated.

Results: 2936 from 3409 patients had AH, 385 patients had AH with COPD. In COPD with AH patients had lower age than without COPD (55,4±8,9 and 57,9±9,1, p<0.001, respectively), among them were more males (51.9% and 30.6%, p<0.001), more frequent smoking history (89,1% and 17.9%, p<0.001), higher SBP and DBP (164,6±11,1 and 160,3±12,8 p<0.001; 98,7±7,9 and 96,1±8,1 p<0.001), more HR (76,6±9,8 and 75,0±8,8 p=0.001). In COPD group there were more patients with 3 or more RF (91.4% and 76.1%, p<0.001) more often TOD (90.4% and 77.3%, p<0.001). Differences in ACC were not observed. **Conclusion:** Patients COPD with AH phenotypically have lower age, more severe condition and have higher risk of CE. Differences in age are possibly due to the fact that patients with COPD have a worse clinical course and older patients are not included in clinical trials in according to the criteria of inclusion/exclusion, which may affect the representativeness of the results with respect to AH with COPD subgroup of patients.

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Platelets count in chronic obstructive pulmonary disease <u>Ernesto Crisafulli</u>¹, Marco Marietta², Elena Venturelli^{1,2}, Mihai Roca³, Bianca Beghè², Monica Bortolotti², Alessia Verduri², Mario Malerba⁴, Michele Malagola⁵, Leonardo Fabbri², Enrico Clin^{1,2}. ¹Pulmonary Rehabilitation, Ospedale Villa Pineta, Pavullo - Modena, Italy; ²DAI Oncology, Haematology and Pneumology, University of Modena, Italy; ³Dpt. of Pneumology, University of Iasi, Romania; ⁴Dpt. Internal Medicine, University of Brescia, Italy; ⁵Dpt. Haematology, University of Brescia, Italy

Platelets count (PTL) and activity in complex COPD is still a matter of debate in recent years. We have therefore undertaken a preliminary retrospective analysis in



196 stable patients (age 73±7 yrs, FEV1 47±16% pred.), to investigate PTL across the patient's characteristics and functions (including lung volumes and exercise tolerance by the six-minute walk test-6MWT). Patients with chronic liver disease were excluded

PTL ($n*10^{-3}/\mu L$) increased according to the GOLD classes of airway obstruction (see figure). When adjusted for potential confounders (age, inflammation index, comorbidities, and use of anti-thrombotic agents) PTL correlated with FEV1 %pred. (r= -0.19, p=0.008) and meters performed at the 6MWT (r= -0.22, p=0.002).

Circulating platelets increase in COPD patients with progressive lung severity and physical disability, possibly related to the parallel increase of systemic inflammation. The study warrants future prospective investigations to test this hypothesis.

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Relationship between rhinitis and health status in patients with COPD Denis Caillaud¹, Pascal Chanez², Roger Escamilla³, Isabelle Court-Fortune⁴ <u>Dems Cantado</u>, rascar Chanez, Roger Escanina, Isabelie Court-Fortune, Philippe Carré⁵, Thierry Perez⁶, Pierre-Régis Burgel⁷, Jean-Louis Paillasseur⁸, Nicolas Roche⁹. ¹Pulmonary Dpt, University Hospital, Clermont-Ferrand, France; ²Pulmonary Dpt, University Hospital, Caremoni-Perman, France; ²Pulmonary Dpt, University Hospital, Marseille, France; ³Pulmonary Dpt, University Hospital, Toulouse, France; ⁴Pulmonary Dpt, University Hospital, Saint-Etienne, France; ⁵Pulmonary Dpt, General Hospital, Carcassonne, France; ⁶Pulmonary Dpt, University Hospital, Lille, France; ⁷Pulmonary Dpt, Paris-Descartes University, Paris, France; ⁸Statistical Dpt, Clindafirst, St Quentin en Yvelines, France; ⁹Pulmonary Dpt, Paris-Descartes University, Paris, France

Rationale: Some studies suggested that rhinitis is frequent in subjects with COPD, but its contribution to health status impairment is not clearly established.

Methods: Cross-sectional analysis of data from the French COPD cohort Initiatives BPCO (n=784 when data was extracted). Symptoms of rhinitis (obstruction, rhinorrhea, anosmia) were assessed by a standardized questionnaire. Health-related quality of life (HRQoL) was measured using the St. George's Respiratory Questionnaire (SGRQ). Other data included dyspnea (modified Medical Research Council -mMRC- scale), mood disorders (hospital anxiety-depression -HAD- scale) and spirometry. Selected subjects were those with complete datasets for all these variables. Univariate comparisons were performed.

Results: 274 COPD subjects were analyzed. 42% (n=115) reported symptoms of rhinitis: rhinorrhea: 62%, nasal obstruction: 43% and anosmia: 16%. Data are median [IQR]. COPD patients with rhinitis had higher SGRQ scores: total 51.4 [33.6-64.3] vs 42.0 [28.5-55.9] (p=0.005), activity 66.3 [47.7-85.9] vs 59.5 [41.3-73.0] (p=0.0016), symptom 57.3 [43.2-70.3] vs 50.4 [36.2-63.1] (p=0.015), impact 36.8 [19.9 -54.5] vs 30.0 [17.8-46.5] (p=0.04), HAD-depression scores 7.0 [3.0-9.0] vs 5.0 [3.0-9.0] (p=0.05) and a trend towards more pronounced dyspnea (p=0.08). They also reported more frequently hay fever (18% vs 9%) and atopic dermatitis (12% vs 5%) (each, p=0.03). FEV1 (mean, 48.5% predicted) did not differ between COPD patients with and without rhinitis.

Conclusions: These data suggest that rhinitis in COPD patients is associated with features of atopy, increased dyspnea and more impaired psychological status and quality of life.

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Psychiatric disorders in COPD patients

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Background: High prevalence of psychiatric disorders in COPD patients, particularly anxiety and depression, is a subject of growing consideration (de Souza C.B. et al., 2003). However, the data published so far relies mostly on psychometric assessment of psychopathology (often self-report questionnaires). Clinical assessment by a mental health specialist is rarely carried out.

Aim: To perform a comprehensive clinical examination of COPD patients' mental status, including assessment of affective, anxiety, personality (PD), and other psychiatric disorders by an expert psychiatrist.

Materials and methods: 43 COPD therapeutic inpatients (male n=36; mean age 65,6±16,4 yr.) receiving care in Sechenov First MGMU Clinic were included into the study. All patients were examined by a pulmonologist and clinically interviewed by a psychiatrist. Beck Depression Inventory was used for psychometric control of depression severity.

Results: Among the patients of the sample the most prominent were personality disorders (PD): dissocial PD (n=9, 20,9%), histrionic PD (n=7, 16,3%), and avoidant PD (n=2, 4,6%). Anxiety disorders (n=12, 41,8%) and depressive disorders (n=4, 9,3%) (mean BDI score - 11,2) were also diagnosed. In 9 cases anxiety or depressive disorder was registered as comorbid to PD. In 18 patients there were no psychiatric disorders found.

Discussion: PD found in COPD patients (mostly dissocial and histrionic PD) may have a negative impact on the COPD course by means of decreasing treatment compliance and intensification of exposure to COPD risk factors (e.g. smoking).

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Association of the percentage of peripheral lymphocytes with disease severity and nutritional status in patients with COPD <u>Ryuko Furutate</u>¹, Kouichi Yamada^{1,2}, Takeo Ishii^{1,2}, Takashi Motegi^{1,2}, Kumiko Hattori^{1,2}, Yuji Kusunoki^{1,2}, Akihiko Gemma², Kozui Kida^{1,2}.

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Background: Several studies have suggested that a low percentage of peripheral lymphocytes (LYM%) is associated with malnutrition, inflammation, and mortality in diseases such as cancer and chronic kidney disease. In COPD cases, malnutrition is very common, and its prevalence increases with disease severity. **Objectives:** We evaluated whether the LYM% is associated with disease severity

and nutritional status in patients with COPD.

Methods: We recruited clinically stable male outpatients with COPD for a crosssectional study. We conducted the following examinations: blood tests, pulmonary function tests, pulmonary computed tomography image analyses, anthropometric measurements, the 6-minute walk test (6MWT), and dyspnoea evaluation. We examined the correlations between the LYM% and the clinical variables.

Results: We evaluated 72 patients (mean age, 70.6 years). The LYM% was significantly correlated with FEV1% predicted (Pearson's coefficient, r = 0.496; p < 0.0005), percentage of low-attenuation area (r = -0.306; p = 0.015), body mass index (r = 0.252; p = 0.034), fat-free mass index (r = 0.404; p < 0.0005), distance covered during the 6MWT (Spearman's rank correlation coefficient, $\rho = 0.491$; p < 0.0005), and the modified Medical Research Council (MMRC) dyspnoea score (ρ = $-0.439;\ p$ < 0.0005). Stepwise multiple regression analysis showed that FEV1% predicted significantly correlated with the LYM% ($R^2 = 0.252$).

Conclusions: A low LYM% is associated with impaired nutritional status, exercise capacity, and pulmonary function. The LYM% may serve as a clinically convenient and useful biomarker for predicting disease severity in patients with COPD.

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Relevance of respiratory muscle strength in chronic obstructive pulmonary disease

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Backgrounds: Respiratory muscle strength is recognized to be impaired in patients with COPD, while its severity in Chinese COPD patients and the related factors remains unclear. Twitch mouth pressure (TwPM) responded to cervical magnetic stimulation is a non-volitional technique to measure respiratory muscle strength. Thus, the present study was aimed to quantify the severity of respiratory muscle weakness at different stages of COPD, and to investigate the potential factors related to TwPM in COPD.

Methods: Seventy-five patients with COPD and sixty-three age-matched controls participated in the study. Pulmonary function was tested for each participant. Respiratory muscle strength was assessed with measurement of both TwPM and non-volitional static mouth pressures. A score of physical activity (PA score) was obtained using an adapted physical activity questionnaire for the elderly, and nutritional status was evaluated with a multiple-nutritional index. Multiple regression models were developed by stepwise method to determine factors independently contributing to TwPM in COPD.

Results: TwPM (cmH2O) was significantly lower in COPD patients [COPD II (12.42±2.19); COPD III (10.85±1.82); COPD IV (8.58±1.46) vs controls (13.95±3.28), P<0.005]. Regression correlation analysis showed that FEV1% pred, PA score, malnutrition index and gender were the independent factors responsible for TwPM, with R^2 of 58% (P<0.001).

Conclusion: We conclude that respiratory muscle strength decreases with increasing severity of COPD. Respiratory muscle strength in COPD is comprised by multiplex factors such as airflow limitation, physical inactivity and malnutrition, with airflow limitation being the most significant one.

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Comorbidity and some markers of cardiovascular disorders in disabled **COPD** patients

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Aim: To assess the comorbidity level and its correlations with markers of cardiovascular disorders in disabled COPD patients.

Methods: A retrospective analysis of 53 disabled patients' medical documentation with COPD II and III stages was performed (age 55,6±1,8, 40 male). The complex assessment of comorbidity level was performed by Charlson index (CI) and BODE-index.

Results: Most of patients (70,5%) had comorbidity level of 2-3 points by CI, so their 10-year prognostic survival diminished to 10-23% compared with healthy

individuals. 11.8% of patients had a CI value equal to 5 points, and 5.9% - equal to 8 points, which is extremely high. One-point comorbidity was recorded in only 5.9% of patients. The CI was significantly correlated with Ketle's index (r = 0,87, p <0,05), the level of total cholesterol (r = 0,71, p <0,05), plasma β -globulins level (r = -0,71, p <0,05), 6-minute walk distance (r = -0,72, p <0,05), and the size of the left atrium of the heart (r = 0,70, p <0,05). As for the BODE-index, 38.9% of patients had its value laying in the range of 4-7 points, indicating a progressive decrease in survival of these patients by 40% or more compared with healthy individuals. The correlation analysis showed a direct reliable link of BODE-index and CI (r = 0,76, p <0,05).

Thus, patients with COPD have a high level of comorbidity, which is closely related to some markers of cardiovascular diseases, protein metabolism disorders, and physical exercise tolerance. The received data suggest that in rehabilitation of COPD patients we should focus on treatment of comorbid conditions in order to increase the life expectancy of patients and reduce the risk of their mortality.

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Prevalence of anxiety and depression in 196 patients with chronic obstructive pulmonary disease (COPD)

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Introduction: Anxiety and depression are common co-morbidities associated with COPD. A systematic review and meta-analysis reported prevalence 36% for anxiety and 40% for depression (1).

Aims and objectives: This prospective study aimed to identify the prevalence of anxiety and depression symptoms in COPD patients attending out-patient respiratory clinics within a UK NHS Trust.

Methods: Patients with COPD were screened in Clinic in 2011 by completing the Hospital Anxiety & Depression Scale (HADS) (2). Data from 196 patients were analysed.

Results: The mean age was 65.3 years (range 31 - 97) and 88 (45%) male. Using NICE 2010 airflow severity criteria 28 had mild obstruction; 69 moderate; 59 severe and 42 very severe. Significant rates of anxiety were seen: 78% of patients had HADS-anxiety (HADS-A) scores 8 or over and 55% of patients had HADS-depression (HADS-D) scores 8 or over. Both the HADS anxiety & depression scores decreased with increasing age (t=2.8, p0.01 for HADS-A; t=2.9, p0.01 for HADS-D).

Mean HADS Results

Age	Patients	Mean HAD-A	Mean HAD-D
<40	1	0	2
40-49	7	11.7	9.4
50-59	25	13.1	10
60-69	55	9.9	8.5
70-79	69	9.8	6.6
80-89	37	9	7.2
≥90	2	8.5	6.5

Conclusion: The prevalence of anxiety and depression is higher in this population than in prior studies. Symptoms of anxiety and depression appear commoner in younger patients and are unrelated to COPD airflow severity. There were no significant associations with COPD NICE severity stage or gender. It is important to screen for both in COPD patients and consider appropriate treatment.

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Degree of LVEF with respect to severity of COPD

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Background: Cardiovascular diseases are important co morbidity in patients with COPD. Detection of the presence of Heart Failure with respect to severity of COPD provides valuable information regarding necessary therapeutics.

Aim of study: The primary aim of this study was to determine the quantum of LVEF, which is an indicator of left ventricular function, in relation with the severity of the COPD as measured by the FEV1.

Methods: Study includes 112 patients of COPD admitted in the Chest Unit of the hospital, which is a tertiary care centre. All the patients were subjected to

thorough history, clinical examination, investigations- ECG, 2-D ECHO of heart, ABG, RFT, LFT, CBC, RBC etc. were done and datas were analysed. **Results:** Most patients were elderly with mean age of 62.77 years. 53.6% (60/112) of patients categorized in GOLD STAGE 1,2 had mean LVEF 59.07

(SD-10.52,SEM-1.552),while 46.5% (52/112) of those in GOLD STAGE 3,4 had mean LVEF 53.55 (SD-8.4,SEM-1.330). This difference between both groups was significant statistically T test (P=0.009) (CI= -9.643 - -1.388),Pearson correlation coefficient 0.363 (p=0.001).

Conclusion: The study clearly indicate that severity of the COPD as measured by the FEV1 is directly related to the severity of the left ventricular function as measured by LVEF.

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COPD and depression

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Backgound: Patients with chronic obstructive pulmonary disease [COPD] have been characterised as a population of chronically ill patients with a higher than normal prevalence of depression.

Objective: To reveal associations of depression with severity, health-related quality of life and mortality of COPD patients.

Methods: A group of 39 COPD patients was analysed during one year. St George's Respiratory Questionnaire [SGRQ] and mMRC scale was done in order to assess quality of life and dyspnoea level. We used the Hospital Anxiety and Depression Scale [HADS] and Geriatric depression score [GDS] for depression assessment. Results: The highest value of depression score were in patients with very severe COPD.

Severity of COPD and depression

	Mild and moderate COPD	Severe COPD	Very severe COPD	р
GDS	9.1±6.2	14.0±8.0	15.3±4.8	0.048
HADS - depression	5.5±4.0	9.7±5.0	10.2±4.6	0.028

Statistical significant correlation was between dyspnoa level and depression score [HADS] [r=0.437, p=0.01]. Also, we found positive correlation between health-related quality of life [SGRQ] and depression score [HADS]: simptoms- depression [r=0.654, p=0.000], activity- depression [r=0.624, p=0.000], impact - depression [r=0.556, p=0.000], total score - depression [r=0.634, p=0.000]. We found statistical significant higher value of initial depression score [HADS] in patients who have been died [n=6] during this study [t test, p=0.001].

Conclusions: These data suggest that depressive symptoms in COPD are related to severity of disease. Depression is also associated with dyspnoea level and quality of life. The data suggest that assessment for depression should be considered for all COPD patients, particularly in those with more severe clinical levels of disease.

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Gastroscopic findings in COPD patients

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Introduction: The aim of this study was to determine the prevalence of GERD symptoms and esophagitis in COPD patients and their effect on the number of exacerbations of COPD.

Materials and methods: This study included 106 COPD patients 55of them (51.88) with moderate COPD and31of them (29.24)with severe COPD and20of them (18.86)with very severe COPD (Gold2009),97were males (91.50) and9were females (8.49). All groups were subjected to history taking, full clinical examination, full laboratory investigations radiography, and spirometry.

Upper GI endoscopy was done in47 (44.33)patients only:25of them (53.19)with moderateCOPD and15of them (31.91) with severe COPD and7of them (14.89)with very severe COPD.

Results: Revealed that the prevalence of GERD symptoms in COPD patients was 45.5% in the moderate group,54.8% in the severe group and 57.9% in the very severe group (total=52.73%), and prevalence of esophagitis in COPD patients by endoscopy was 32% in the moderate group, 26.7% in the severe group and 42.9% in the very severe group (total=53.86%).

GERD symptoms and esophagitis increase with increase in the smoking (pack/year) both in moderate & in the severe groups.

Moreover, there were increase in the frequency of exacerbations of COPD in positive GERD symptoms patients both in moderate & in the severe groups. Presence of esophagitis increases the frequency of emergency visits andHospitalization of COPD patients.

Discussion: GERD is common in COPD patients being more among severe group, also GERD increases the number of exacerbations.

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Effect of antidepressants on respiration with chronic physical disease <u>Ki-Suck Jung</u>¹, Yong II Hwang¹, Hee Soon Chung², Wang-Youn Won³, Yeon-Mok Oh⁴, Sang-Do Lee⁴, ¹Pulmonary, Allergy and Critical Care Medicine, Hallym University Medical Center, College of Medicine, Hallym University, Seoul, Republic of Korea; ²Pulmonary and Critical Care Medicine, Seoul National University Boamae Hospital, Seoul National University College of Medicine, Seoul, Republic of Korea; ³Psychiatrics, St. Paul Hospital, Catholic University, Seoul, Republic of Korea; ⁴Pulmonary and Critical Care Medicine, Asan Medical Center, University of Ulsan, College of Medicine, Seoul, Republic of Korea

Physical illness is strongly associated with depression. In Korea, 23.8% of COPD patients suffer from depression. Aside from being an unpleasant condition in its own right, depression is a risk factor for poor prognosis of physical diseases. Therefore, it has been emphasized that management of depression in patients with physical illness. Anxiolytics such as diazepam is well known to have respiratory suppression. But little is known for the anti-depressant to have such effects. The aim of this study was to evaluate the effects of anti-depressants on respiration in patients with physical illness including COPD.

We performed systematic review of randomized controlled trial. A literature search was conducted for key words "depressive disorder, pharmacological therapy and chronic illness" using Mediline_pubmed, Embase, Cochrane library, and National Guideline Clearinghouse (NGC). A total 69 studies were recruited. Of these, nine studies were included for final analysis (six studies for COPD, three studies reporting dyspnea as an adverse event).

Anti-depressants didn't worsen the respiratory symptoms nor cause respiratory suppression in patients with COPD. Anti-depressants had no effects on pulmonary function, exercise capacity and the results of blood gas analysis in COPD patients. In patients with chronic illness other than COPD, anti-depressants caused less dyspnea compared to placebo (13% vs. 17.6%, p<0.0001) and did not develop the respiratory suppression.

In conclusion, anti-depressants did not aggravate dyspnea in patients with chronic physical illness including COPD. However, it is not sufficient to conclude that anti-depressants are safe in physically ill patients. A large prospective study is warranted.

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Assessment of the BODE index, arterial stiffness and endothelial dysfunction in patients with chronic obstructive pulmonary disease

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Aim: COPD is a respiratory disorder, but also having systemic effects. Cardiovascular diseases are leading cause of mortality in patients with COPD and have an important prognostic role. In this study, we investigated the mechanisms of COPD associated increased cardiovascular risk, measured by arterial stiffness, endothelial dysfunction and the BODE index.

Method: Fifty men with stable COPD were compared with fifty healthy male control subjects who had approximately same age and normal lung functions. Cardiovascular assessments, which include evaluation of endothelial function, arterial stiffness and echocardiographic measurements, as well as BODE index, were carried out in all subjects.

Results: Arterial stiffness parameters evaluated by photoplethismographic measurement were similar in both groups. However, direct arterial stiffness were detected only in nine subjects with COPD. Nitrate mediated dilation (NMD) measurements were found to be worsened in patients with stable COPD than in control subjects. In the same model, flow mediated dilation (FMD) was associated with NMD positively. In patient group, the BODE index values were found to be statistically higher than the control group. Moreover, BODE index was negatively correlated with FEV1, body mass index and 6-minute walking test, but positively correlated with the MMRC dyspnea scale.

Conclusion: The presence of arterial stiffness, endothelial function abnormalities and endothelium independent smooth muscle dysfunction may indicate the relationship between COPD and the increased risk of cardiovascular disease.

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Variability in systemic inflammatory response, nutritional profile, and quality of life in stable COPD due to tobacco and non-tobacco etiology

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Background: The effect of tobacco and non-tobacco exposures (such as indoor air pollution) on systemic inflammatory response in COPD is not well understood. **Objectives:** To compare the systemic inflammatory response, nutritional status, and quality of life between patients with stable COPD due to tobacco and non-tobacco causes and with patients without COPD.

Methods: Subjects were categorized into four groups; I- COPD due to tobacco smoking; II-COPD due to non tobacco causes; III-Smokers without COPD, and

IV- Non smoking healthy controls. Plasma Matrix metalloproteinase (MMP-9), and Tissue Inhibitor of metalloproteinase (TIMP-1) were estimated as markers of inflammation along with skin fold thicknesses, 6 Minute walk distance (6 MWD), and quality of life (QOL) using the St. George's Respiratory Questionnaire.

Results: 30 patients were recruited in each group. Compared to non COPD patients (groups III and IV), patients with COPD (groups I and II) were significantly older, had poorer nutritional status (assessed by skin fold measurements and BMI), and worse QOL. MMP-9 in group I was significantly higher than groups III and IV, but not group II, while TIMP-1 was insignificantly higher in group I than IV. However, there were no significant differences in 6 MWD, nutritional profile, QOL scores, or MMP-9 and TIMP-1 between patients with COPD due to tobacco or non-tobacco causes.

Conclusion: The presence of COPD is associated with increased systemic inflammatory response, muscle wasting, lower exercise capacity and poorer QOL. The etiological agent of COPD, however, does not seem to be an important factor in affecting the above parameters.

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Anemia in chronic obstructive pulmonary disease

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Anemia is frequently associated with many chronic diseases and can be responsible for weakness, fatigue, impaired mood, deficits in cognitive function and decreased quality of life. Anemia is also common in COPD and is associated with higher comorbidity, mortality, and costs of care, its prevalence in COPD patients is estimated at 13 to 23%.

The aim of our study was to evaluate the prevalence of anemia in COPD patients and analyze its relationship with functional status.

Methods: Study group consisted of 132 patients (37% F), at mean age 68.2 ± 9 years with post-bronchodilator FEV1 57.1 \pm 19.2% of predicted. Anemia was defined by hemoglobin concentration < 13.5 g/dL in male and < 12 mg/dL in female patients. Biochemical analysis included measurement of serum C-reactive protein, iron, transferrin, and soluble transferrin receptor. Pulmonary assessment comprised spirometry, plethysmography and 6 minute walk test (6MWT).

Results: Anemia was diagnosed in 24 (18.2%) patients: 4 female and 20 male patients (p<0.05). There were no differences in the distribution of anemia depending on the severity of COPD (according to the GOLD staging system or BODE index). Patients with anemia were older (66.7 ± 8.9 vs 74.5 ±5.6 yrs; p<0.05), had higher serum creatinine level (0.91 ± 0.2 vs $1,0\pm0.2$ mg/dL; p<0.05) and lower 6MWT distance (365.5 ± 123 vs 439.3 ± 115.4 m; p<0.05). Patients with anemia were also characterized by lower serum iron (90.2 ± 30.7 vs 1.1 ± 41.2 µg/dL; p<0.05) and higher serum transferrin receptor (3.7 ± 1.2 vs 3.1 ± 0.9 mg/L; p<0.05).

Conclusions: Anemia in COPD is more prevalent in males and can effect up to 20% of patients. It does not seem to depend on the severity of disease, however, it significantly reduces exercise capacity of patients.