Methods: We used data from the population-based Austrian Burden of Obstructive Lung Disease (BOLD) study. Participants were aged ≥ 40 years and completed post-bronchodilator spirometry. Risk factors for COPD and respiratory symptoms were recorded. A clinical history indicating COPD was defined as the presence of one or more risk factors and any concomitant respiratory symptom(s).

Results: Among 1258 participants 255 (20.3%) reported presence of one or more risk factors and presence of one or more respiratory symptoms, and were therefore considered to present with a clinical history indicating COPD. Among those the proportion of airways obstruction defined by FEV1/FVC < LLN and FEV1/FVC < 0.70 was 26% and 39%, respectively. Altogether 99 (7.9%) subjects presented with a clinical history indicating COPD and FEV1/FVC < 0.70, while 65 (5.2%) presented with a clinical history indicating COPD and FEV1/FVC < LLN. 

Conclusion: Utilization of the LLN as a threshold for the FEV1/FVC ratio would identify approximately two thirds of subjects with a clinical history indicating COPD and GOLD-defined airways obstruction. The majority of those not identified when using the LLN would have mild disease (GOLD stage I).

P3562
Longitudinal validation of clinical COPD phenotypes identified by cluster analysis
Pierre-Régis Burgel, Jean-Louis Paillasseur, Denis Caillaud, Isabelle Tillie-Leblond, Pascal Chanez, Roger Escamilla, Isabelle Court-Fortune, Thierry Perez, Philippe Carré, Nicolas Roche. INITIATIVES BPCO Scientific Committee, Université Paris Descartes, Paris, France

Because FEV1 is a poor descriptor of COPD heterogeneity, a great interest has emerged regarding the identification of clinically relevant COPD phenotypes. Using principal component and cluster analyses on multiple clinical variables, we described 4 COPD phenotypes (Burgel, P.R. et al. Eur Resp J 2010; 36: 531-9):

– Phenotype 1: young subjects with severe respiratory disease.
– Phenotype 2: older subjects with mild respiratory disease and few comorbidities.
– Phenotype 3: young subjects with moderate to severe respiratory disease and few comorbidities.
– Phenotype 4: older subjects with moderate to severe respiratory disease and major comorbidities.

Methods: Data regarding vital status of the 322 COPD subjects included in our previous analyses were systematically requested. Cox proportional hazards model was performed to examine whether mortality was different among phenotypes.

Results: Data were available for 303/322 (94.1%) subjects and median [IQR] follow-up was 3.35 [2.01; 4.25] yr. During prospective follow-up, 60/303 (19.8%) died. Differential mortality among phenotypes is shown in Table 1. Interestingly, the highest mortality rate was found among the youngest subjects (Phenotype 1).

P3563
Clinical COPD questionnaire (CCQ) score and mortality
Josefin Sundh1, Christer Janson2, Karin Lisspers3, Scott Montgomery4, Bjorn Stallberg5. 1Department of Respiratory Medicine, Örebro University Hospital, Örebro, Sweden; 2Department of Medical Sciences, Respiratory Medicine and Allergology, Uppsala University, Uppsala, Sweden; 3Department of Public Health and Caring Science, Family Medicine and Clinical Epidemiology, Uppsala University, Uppsala, Sweden; 4Clinical Epidemiology and Biostatistics Unit, Örebro University Hospital, School of Health and Medical Science, Örebro University, Örebro, Sweden

Introduction: Quality of life is an important patient-oriented measure in COPD. The Clinical COPD Questionnaire (CCQ) is a validated instrument for estimating health status, correlating well with instruments such as SGRQ and SF-36. The prognostic qualities of CCQ have not been evaluated. This study investigated the association of CCQ with all-cause mortality in COPD patients.

Methods: A total of 1548 patients with a diagnosis of COPD were randomly selected from 70 Swedish primary and secondary care centres. The analysis included 956 patients (aged 34-75 years). Information was collected using questionnaires and record review. The Swedish Board of Health and Welfare provided mortality data. Cox regression estimated survival with adjustment for age, sex, smoking, education, level of care, and lung function (only available for a subset with spirometry data, n=491).

<table>
<thead>
<tr>
<th>Phenotype</th>
<th>Median age at inclusion</th>
<th>Mortality rates</th>
<th>Mortality: Risk Ratio (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenotype 2</td>
<td>68</td>
<td>708 (89%)</td>
<td>1.0</td>
</tr>
<tr>
<td>Phenotype 3</td>
<td>59</td>
<td>17/87 (20%)</td>
<td>2.73 (1.13; 6.60)</td>
</tr>
<tr>
<td>Phenotype 4</td>
<td>72</td>
<td>21/85 (25%)</td>
<td>3.34 (1.41; 7.87)</td>
</tr>
<tr>
<td>Phenotype 1</td>
<td>58</td>
<td>15/43 (35%)</td>
<td>4.50 (1.83; 11.31)</td>
</tr>
</tbody>
</table>

Conclusion: These data provide strong evidence that our previously identified phenotypes have different natural history.

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Results: Over five years, 216 patients (22.6%) died. In patients with CCQ ≥3 indicating very severely limited health, mortality risk was statistically significantly higher than in stable COPD patients with mean CCQ <1 (37.6% vs 11.3%), producing a hazard ratio (and 95% confidence interval) of 3.87 (3.85 to 4.85) after adjustment for the potential confounding factors. In the subset with spirometry data, further adjustment for FEV1 pred reduced the hazard ratio to 2.61 (1.21 to 5.64).

Conclusion: In addition to health status, CCQ has prognostic qualities relevant to mortality in COPD patients, even after adjustment for lung function.

P3564
The “rapid decliner” as a COPD phenotype associated with predominant emphysema
I. Cerveri1, A. G. Corsico1, A. Grossi1, V. Ronzon1, B. Tripoli1, F. Albinc1, F. Imeri1, A. Foroni1, C. Karczi1, M. Lusieti2.1, Respiratory Diseases Division, Fondazione IRCCS Policlinico S. Matteo, University, Pavia, Italy; 2Radiological Pathophysiology Unit, Hospital, Sexto San Giovanni, Italy

COPD phenotype should be able to classify patients into distinct subgroups that provide prognostic and therapeutic information. We sought to identify the characteristic associated with a FEV1 rapid decline in a well defined cohort of 131 outpatients (M/F 112/19, 69 ± 7 years) with moderate COPD, in stable condition, under optimal medical therapy, and without uncontrolled comorbidities. They were followed-up for 4 ± 1 years. To this aim, we adopted a wide multidimensional approach with a comprehensive clinical, functional, and imaging characterization of all patients. At CT scan, 26% of them had emphysema; 67/131 subjects with FEV1 decline greater than the median value of 40 mL/y were identified as rapid decliners.

In the univariate analysis the decline of FEV1 was correlated with the duration of smoking (p < 0.005), presence of emphysema (p < 0.001), FVC percent pred. (p < 0.01) and absolute value (p < 0.05), RV percent pred. (p < 0.05) and absolute value (p < 0.01) at baseline and number hospitalization per year (p < 0.05) during the follow-up. It was also negatively correlated with chronic cough and phlegm without dyspnea (p < 0.05) at baseline. Multivariate analysis, smoking, duration of smoking, chronic cough and phlegm without dyspnea were retained in association with presence of emphysema in one model (p < 0.01) and with RV absolute value in another (p < 0.05). In conclusion, the rapid decliner phenotype could be identified by radiological emphysema or gas trapping in patients with a long smoking history and dyspnea and without chronic cough and phlegm.

P3565
Can we assess COPD comorbidities by BODE index?
Alexandre Corlatca1,2, Gloria Montanari3, Victor Botnaru1,2.1, Internal Medicine, State Medical and Pharmaceutical University, Chisinau, Republic of Moldova; 2Respiratory Diseases, The Institute of Phthisiopneumology “Chiril Dragusanu”, Chisinau, Republic of Moldova; 3Respiratory Diseases, University of Modena, Modena, Italy

Background: COPD is characterized by a poorly reversible airflow limitation resulting from chronic inflammation, mainly due to tobacco exposure. The systemic inflammation induced by smoking may also cause extrapulmonary comorbidities, which may contribute to the clinical manifestations, natural history of COPD and significantly complicate the management and influence the prognosis.

The aim of this study was to evaluate the possibility to assess comorbidities by GOLD/ATS/ERS classification and BODE index.

Methods: 158 consecutive COPD patients were enrolled into the study. We analyzed age, gender, anthropometric, pack years, spirometric data (FEV1, FVC, FEV1/FVC), BODE index (BMI, FEV1, MRC, 6 MWD). Comorbidities were assessed by the Charlson Comorbidity Index (CCI).

Results: 158 COPD patients were studied, mean age 64 ± 8 ± 8 years. Patients across all stages GOLD/ATS/ERS classification had similar age and packyears (p > 0.05). As our data shows, the prevalence of comorbidities was similar when GOLD/ATS/ERS assessment of severity was applied. After the application of BODE classification the increase of comorbidities with severity of COPD was observed. There were no significant correlations between GOLD/ATS/ERS stage and comorbidities. Then Pearson correlation coefficient analysis demonstrated a significant positive correlation between the BODE and the comorbidities (r=0.29, p < 0.01) in COPD patients.

Conclusion: Comorbidity score correlates with BODE, this fact suggests that BODE is potentially able to measure COPD comorbidities. Further work is required to evaluate relationship between the BODE and COPD comorbidities.

P3566
Cluster analysis revealed differences on quality of life and susceptibility to exacerbation between subpopulations of smokers including COPD
Hiroki Hayashi, Takeo Ishii, Nariaki Kukahara, Takashi Motogi, Kumiko Hattori, Kouichi Yamada, Kochio Kamio, Akihiko Gemma, Hiroki Hayashi, Takeo Ishii, Nariaki Kukahara, Takashi Motogi, Kumiko Hattori, Kouichi Yamada, Kochio Kamio, Akihiko Gemma, Kumi Kato, Department of Internal Medicine, Division of Pulmonary Medicine, Infectious Diseases and Oncology, Respiratory Care Clinic, Nippon Medical School, Tokyo, Japan

Background: It is necessary to categorize subpopulations of COPD or smokers by non-outcome phenotypes, such as emphysema without airflow obstruction.

Methods: 730 current- or ex-smokers including 382 COPD subjects were studied (66.7 ± 11.0 yrs, 62/36 males/females). We collected the data for all the subjects on pulmonary function test, 6 minute walking test (6MWT), body mass index (BMI), dyspnea (modified Medical Research Council (MMRC) Dyspnea Scale, Oxygen Cost Diagram (OCD)), and the extent of emphysema and airway disease assessed by chest computed tomography (CT) (low attenuation area (LAA)/% and wall area (WA)/%), and we also studied the data on the score of St. George’s Respiratory Questionnaire (SGRQ) for QOL (n = 361), and exacerbations (n = 178). We performed a principal component analysis (PCA) and cluster analysis by k-means method.

Results: PCA showed the major factors as follows: vital capacity (VC), LAA/%, WA/%, reversibility, PaO2, PaCO2, leg fatigue on 6MWT.

Cluster analysis with these factors classified the subjects into four clusters as follows: Cluster 1: 254 cases with mild emphysema (LAA/% 22.1 ± 10.8, WA/% 45.0 ± 14.1); Cluster 2: 156 cases with airway disease (LAA/% 15.7 ± 11.3, WA/% 58.3 ± 12.8); Cluster 3: 152 cases with emphysema and airway disease (LAA/% 20.1 ± 13.2, WA/% 6.5 ± 11.5); Cluster 4: 168 cases with severe emphysema (LAA/% 41.0 ± 11.8, WA/% 57.0 ± 11.3).

Cluster 4 has the highest SGRQ score (p < 0.0001). Cluster 2 and 4 were more prone to exacerbations (p < 0.01).

Conclusions: PCA and cluster analysis revealed that chest CT contributes to the classification to subpopulations in smoker with or without COPD.

P3567
Spirometry in UPLIFT™: Quality and reproducibility over time
Wim Janssens1, Dacheng Lin2, Steven Kesten3, Donald P. Tashkin4, Bartolomeo R. Celli5, Marc Decramer5.1, Dept. of Pneumology, University of Leuven, Leuven, Belgium; 2Medical, Boehringer Ingelheim Pharmaceuticals, Inc., Ridgefield, CT, United States; 3Medical, Atrium Health Medical, Tustin, CA, United States; 4Dept of Medicine, David Geffen School of Medicine, Los Angeles, CA, United States; 5Dept of Pulmonary, Brigham and Women’s Hospital, Boston, MA, United States

Background: UPLIFT™ was a 4-yr, randomized, double-blind, placebo-controlled multicenter trial in 5993 patients (pts) with chronic obstructive pulmonary disease (COPD).

Aims and objectives: To explore spirometry quality and reproducibility in this large trial.

Methods: Within-test variability of pre- and post-bronchodilator (BD) forced expiratory volume in 1s (FEV1) was within ± measurement error of acceptable maneuvers in 1 spirometry, compared across study visits. Between-test variability was mean difference of best pre- or post-FEV1 values between 2 visits (6 mo interval), corrected for normal decline 1-5 ml/s, at trial start (a), middle (b) and end (c).

Results: 3 acceptable maneuvers in 93.8% visits. Within-test variability of pre- and post-FEV1 (mean SD: 0.092L and 0.098L) decreased during the trial (visits 3-19: figure), a similar pattern seen in analysis of pts with measurements at all visits. Between-test variability decreased over time: pre-FEV1 (a=0.14 ± 0.13L; b=0.13 ± 0.12L; c=0.12 ± 0.12L); post-FEV1 (a=0.14 ± 0.14L; b=0.13 ± 0.12L; c=0.12 ± 0.12L), and was dependent on age, sex, smoking status, GOLD stage, but not BD response or treatment (tiotropium/control).

Conclusion: Spirometry quality in UPLIFT™ was excellent and improved during the trial. Large inter-variation variability dependent on age, sex, smoking and COPD severity suggests relevant cut-offs for individual disease monitoring are hard to establish.

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P3568
Discriminative characteristics of the CAT score in stable COPD patients
Eric Marchand, Giselle Maury. Pneumology, Cliniques Universitaires UCL de Mont-Godinne, Yvoir, Belgium

The CAT score is a new tool to assess health-related quality of life in patients with COPD. Its discriminative characteristics are yet to be described.
We aimed at assessing the discriminative characteristics of the CAT score collected prospectively in consecutive stable ambulatory COPD patients seen by the authors. The CAT score was compared across GOLD stages, MMRC dyspnea scale, and BODE indexes. Its relationship with relevant variables was assessed by regression analysis. 213 patients were included (GOLD stage I/II/III/IV: n=127/55/57/11). The distribution of the CAT score was gaussian with no ceiling or floor effect. Mean CAT score was 14.3±2.1, 16.6±6.0, 19.9±1.2, 23.1±1.8 in GOLD stages I, II, III, IV. Scores were significantly different between all stages except between stages I and II. Mean CAT score across the quartiles 1, 2, 3, 4 of the BODE index was 15.4±2.8, 19.1±1.1, 23.4±1.5, 25.8±2.0. 12 scores were significantly different between all quartiles except quartiles 3 and 4. Mean CAT score across MMRC scale 0-1, 2, 3, 4 were 12.7±0.8, 19.9±0.7, 25.5±0.8, 22.5±1.8. Scores were significantly different between all dyspnea scales except grade 3 and 4. The CAT score was significantly correlated with post-BD FEV1 (r2=0.17), RV/TLC (r2=0.17), DLCO (r2=0.13), 6MWD (r2=0.15), MMRC dyspnea scale (r2=0.37), BODE index (r2=0.31), among other parameters. In multivariate analysis, only 42% of the CAT variability could be explained by relevant variables and only dyspnea and RV/TLC were significant predictors of the CAT score. We conclude that the CAT score has discriminative characteristics that are similar to those for more complex tools assessing health-related quality of life in patients with COPD.

PP3569
Clinical-morphological changes in bronchial mucous membrane according to the III-IV COPD stages
Igor Ivakh, Olena Myronenko. Internal Medicine Department, Donepropetrovsk State Medical Academy, Donepropetrovsk, Ukraine

Aim: To estimate the depthness, intensity and reversibility of structural changes in bronchial walls in III-IV COPD stage with immunomorphological method using.

Study design: 42 pts (mean age 59±1.7 years) with COPD: I gr. - 30 pts with III stage (30 male), II gr. - 12 pts with IV stage (9 male). Bronchoscopy with consequent histology sampling and assessing by microscopy and immunohistochemistry (IHC) were significantly different between all dyspnea scales except grade 3 and 4. The CAT score was significantly correlated with post-BD FEV1 (r2=0.17), RV/TLC (r2=0.17), DLCO (r2=0.13), 6MWD (r2=0.15), MMRC dyspnea scale (r2=0.37), BODE index (r2=0.31), among other parameters. In multivariate analysis, only 42% of the CAT variability could be explained by relevant variables and only dyspnea and RV/TLC were significant predictors of the CAT score. We conclude that the CAT score has discriminative characteristics that are similar to those for more complex tools assessing health-related quality of life in patients with COPD.

PP3570
Impairment of membranous and vascular components of pulmonary diffusion and plasma endothelin-1 in patients with liver cirrhosis with and without COPD
Susann Langwieler1, Thomas Wex2, Malfertheiner Peter 2, Jens Schreiber 1, Emiel Wouters1,2.

1Pneumonology, Otto-von-Guericke-University Magdeburg, Magdeburg, Germany; 2Department of Internal Medicine, Division of Pulmonary Medicine, Otto-von-Guericke-University Magdeburg, Magdeburg, Germany

Liver cirrhosis (LC) may be rarely complicated by hepatic pulmonary syndrome or hypotension. Nevertheless abnormalities of gas exchange are frequent in LC. The mechanisms are still unclear. A reduced hepatic clearance of Endothelin – 1 might play a role.

In 72 pts. with LC, 29 (40.3%) of whom had accompanying COPD, PFT were performed as well as measurements of PAO2, diffusion capacity, pulmonary capillary blood volume (Qc), membrane diffusing capacity (Dm) and plasma ET-1. The functional measurements were performed in a matched group of pts. with COPD without liver function impairment (n=38).

None of the pts. had clinically manifest hepatic pulmonary syndrome or hypotension. The result was 15.9±4.7, 16.0±4.9, 19.1±3.5, 22.9±3.4. The functional measurements were performed in a matched group of pts. with COPD and COPD and 31/39 (79.5%) pts. with sole COPD showed decreased TLC. In all pts. but one sole LC Dm was reduced. Qc was reduced to a lesser extent in 47 (65.2%) pts., with a greater impairment of Dm. In the COPD group the mechanisms of decreased Dm was the overwhelming mechanism of an abnormal diffusion capacity. PAO2 was significantly negatively correlated with TLC. Qc and to a lesser extent with Dm in pts. with LC without ventilatory impairment. All pts. with LC independently on coexisting COPD showed increased plasma concentrations of ET-1, which were negatively correlated with Qc (r=-0.57, p<0.015). Impairment of the Dm as responsible for an abnormal gas exchange in pts. with LC contrary to COPD where reduction of Dm plays the most important role. Increased ET-1 in LC might contribute to pathogenesis of gas exchange impairment in LC.

PP3571
Clinical characteristics of COPD with mild bronchiectasis
Misuzu Kurahara, Nariaki Kokubo, Hiroki Hayashi, Takeo Ishii, Tatsahi Motegi, Kumiko Hattori, Kouichi Yamada, Koshiro Kamiyo, Akihiko Gemma, Kozu Kida. Department of Internal Medicine, Division of Pulmonary Medicine, Infectious Diseases and Oncology, Respiratory Care Clinic, Nippon Medical School, Tokyo, Japan

Aim: We tested the hypothesis that patients who have COPD and develop mild BE have a more deteriorated QOL, exercise capacity, and outcome after 1 year than patients who have COPD without bronchiectasis (BE).

Methods and subjects: The study population consisted of 204 consecutive patients with COPD. All the patients underwent HRCT of the chest and the following studies: quantitative assessment of bronchiectasis by using the methods reported by Bhatia (1991) and Smith (2010), pulmonary function tests, 6-minute walking test, and assessment for QOL. The outcomes for acute exacerbations were evaluated for 1 year.

Results: The study included 204 patients (men, 189; women, 15) with a mean age of 71.2 years. The prevalence of BE in the patients was 27% (n = 55), and the frequency of exacerbations (FE) was 0.49 per year for 70 of the patients. On adjusting for FEV1%, age, and gender, it was found that the patients who had COPD and BE had significantly risk of FE than did those who had COPD without BE (p < 0.02). Visual analog scale-QOL assessments indicated a trend towards deteriorated QOL for patients with BE with regard to social activity alone. The fat free mass index for patients with BE was significantly lower than that for patients without BE (p < 0.02). These data were almost similar for the 2 different assessments performed using the methods reported by Bhatia and Smith. Conclusions: The patients who had COPD with mild BE had greater likelihood of acute exacerbation than did the patients who had COPD without BE. This characterized phenotype of COPD that is attributed to BE should be evaluated for chronic management even in mild cases of BE.

PP3572
Bronchial hyperresponsiveness as phenotypic feature of COPD

Bronchial hyperresponsiveness (BHR) in COPD applies to a pathophysiologic sign that can provide additional information about severity and features of disease.

Aim: To compare clinical-functional features and health-related quality of life (QOL) in COPD depending on BHR level as phenotypic sign.

Methods: 75 moderate severe (II stage) COPD patients (66 male) mean age of 57 yrs were studied. COPD symptoms on the 5-scale score (MRC and Galsvik, 1988), spirometry parameters, smoking (packs-years) and QL (SGRQ) were analyzed depending on the BHR in metastable stage. Criteria of positive BHR was provocative dose (PD20)>0.471 mg. Results: By results of the methacholine challenge patients were divided into two groups: the 1st- positive test (PD20)>0.471 mg) and the 2nd negative (PD20>0.471). BHR was revealed at 52 of 75 (69%) patients. Among them female presented 89%. Women had higher level BHR than men: PD20 0,024 mg vs 0,121 mg (p=0.01). The QL of the 1-st group was worse than the 2-nd group. The median difference of SGRQ domains between two groups worked out: Symptoms 24, Activity 14, Influence 13, Total 15 points (p<0.01 in all cases). The dyspnoea level corresponding to worse QL was higher in 1-st group: the difference of mean was 0.8 points (p<0.0003). The mean of PD20 in patients with severe dyspnea was less 2.2 in times in comparison MRC dyspnea 1-2 grades (p=0.09). BHR contributes to formation of severe dyspnea in COPD: OR 8.6 (CI 1.6-OR>51.5; p=0.007). However no significant differences were found for FEV1 and smoking status.

Conclusion: A part of COPD patients, especially women have BHR. BHR mod-
ifies current of disease and promotes more severe dyspnea, worse QL of COPD patients with comparable value of FEV1.

PP3573
Skin autofluorescence is not a good marker for disease status in COPD
Poomma Gopal1, Erica Rubben 2, Nikki Reynaer1, Nick Ten Hacken1,2, Emil Wester3,2,1, Respiratory Medicine, University of Maastricht, Maastricht, Limburg, Netherlands; 2Program Development, Centre of Expertise for Chronic Organ Failure (Ciro), Horn, Limburg, Netherlands, 3Pulmonology, University Medical Center Groningen, University of Groningen, Groningen, Netherlands

Rationale: Skin autofluorescence (AF) is measured non invasively and is shown to correlate with collagen linked fluorescence and skin levels of specific advanced

6393
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COPD patients are often afflicted by multiple comorbidities. To assess the nature and prevalence of comorbid diseases in a COPD population and to study the association between comorbidities and COPD severity status.

**Methods:** We studied 470 patients who met GOLD spirometric criteria for COPD and were randomly recruited from all our out-patients (n=620). All 98 pts (79 males, 65.1 years, FEV1 55.5% ± 22.7) were randomly recruited from all our out-patients (n=620).

**Results:** Severity of bronchial obstruction (FEV1%) was identical in both subgroups. The mean values of MRC in males and females subgroups were 1.84 and 2.42 respectively. The mean values of MRC were higher for women in all stages of the disease (stage I - males 1.24 and females 2.50; II - 1.41 and 2.33; III - 1.86 and 3.33; IV - 2.89 and 3.29) Inter-gender difference was statistically significant (p<0.028 chi square test). Although we did not find any significant difference between the prognostic parameters (ADO, classical and modified GOLD) in males and females, women achieved a higher score in all three indexes.

**Conclusion:** We confirmed gender difference in the perception of dyspnea among ex-smokers with COPD. We did not show significant gender difference in values of prognostic indexes.

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**P3574**

**Association between comorbidities, disease severity and body mass index in COPD patients**

Marli Knorst1,2, Juliana Nunes2, Lucas Ries2, Jorge Valentini2, Leandro Rech2.

**1Serviço de Pneumologia, Hospital de Clínicas de Porto Alegre, Porto Alegre, RS, Brazil; 2Departamento de Medicina Interna, Universidade Federal do Rio Grande do Sul, Porto Alegre, RS, Brazil**

**Background:** COPD patients are often afflicted by multiple comorbidities. Objectives: To assess the nature and prevalence of comorbid diseases in a COPD population and to study the association between comorbidities and COPD severity and outcome.

**Methods:** We studied 470 patients who met GOLD spirometric criteria for COPD (post-bronchodilator FEV1/FVC < 0.7). Data on comorbidities and pulmonary function tests were collected. Subjects were stratified by GOLD stage (GOLD I- IV) and body mass index (BMI) as underweight (BMI<18.5; n=119), normal-weight (n=115), overweight (BMI>25-30; n=130) and obese patients (BMI>30; n=95). Data are presented as mean (SD): Spearman test Kruskal-Wallis test were used.

**Results:** Of the patients studied, 281 were men (59.8%), with mean age of 64.9 (10.3) years, FEV1 of 1.31 (0.3) l and BMI of 25.3 (5.7) kg/m 2 ). The average of number of comorbidities per patient was 3.1 (1.9). In 105 patients (22.3%) five or more comorbidities were identified. The most frequent comorbidities found were hypertension (44.9%), cardiac disease (20%), diabetes (14.7%), osteoporosis (13.6%) and dyslipidemia (13%). There was no correlation between COPD severity and number of comorbidities (p<0.05). There was a significant correlation between BMI and number of comorbidities (r = 0.323; p <0.001). Obese patients had an average of 4.1 comorbidities, and underweight, normal-weight and overweight patients of 2.8, 2.5 and 3.1, respectively.

**Conclusion:** We found that comorbidities are frequent in COPD and are associated with increase of BMI. Therefore, COPD patients should be encouraged to maintain their weight in the normal range. Supported by FINE/HCPA and FAPERGS.

**P3575**

**Features of mucous membrane changes of bronchial tree at patients with COPD**

Tetyana Pertseva, Igor Ivakh. Internal Medicine Department, Dnipropetrovsk State Medical Academy, Dnipropetrovsk, Ukraine

**Aim:** Research was an estimation of expressed changes of mucous membrane of bronchial tree at patients of COPD on the different stages of pathologic process.

**Methods:** We investigated 86 patients (pts) (53 males, mean age 62.4±4.2 yrs) with COPD. All pts were divided on three groups: 1 group (gr.) – 10 pts with COPD I stage (st); II gr. – 28 pts with II st.; III gr. – 36 pts with COPD III st. – 12 pts with COPD IV st. The state of mucous membrane of bronchial tree, degrees of atrophy of epithelium, character and amount of mucus, was estimated.

**Results:** All pts had manifestations of atrophic change of bronchial tree mucous (1 and 2 degree of atrophic endobronchitis), however significant differences in pts I and II gr. (1 degree of atrophic endobronchitis) didn't found. Endoscopic picture in pts III gr. was characterized by atrophic change (atrophic endobronchitis of 2 degrees). Prs. with IV st. COPD was dominated by manifestations of deforming endobronchitis against mucosal atrophy 3 st.

**Conclusion:** We found that comorbidities are frequent in COPD and are associated with increase of BMI. Therefore, COPD patients should be encouraged to maintain their weight in the normal range. Supported by FINE/HCPA and FAPERGS.

**P3577**

**Comorbidities associated with chronic obstructive pulmonary disease (COPD) – A clinical study**

Gospodnat Varianant, Supriya Adiyodi. Pulmonary Medicine, Jubilee Mission Medical College, Trichur, Kerala, India

**OPD continues to be one of the commonest causes of increasing morbidity and mortality globally. While cardiovascular (CVD) and cerebrovascular diseases are decreasing over the years, COPD is the fourth leading cause of death, thanks to continuing smoking habits, atmospheric and industrial pollution. Lack of awareness and late diagnosis add insult to injury. Associated comorbidities such as CVD, musculoskeletal disorders and infective exacerbations are not often recognised.**

**Chabra SK et al Indian J Chest Dis Allied Sci 2010;52:225-238.** Recognition of comorbidities associated with COPD and concurrent management will go a long way in reducing morbidity and even mortality. The situation is worse in developing countries where diabetes, alcoholic liver diseases and human immunodeficient diseases are rampant and hence this communication. All patients with recurrent cough,dyspnea and chest pain exposed to smoking habits and/or other pollutants were screened. They were subjected to spirometry, imaging studies,metabolic/biochemical lab evaluation, and EKG. Diagnosis was established by the GOLD criteria and comorbidities by relevant clinical evaluation and relevant lab studies.

**Results:** There were 110 patients in the age group 35-75 years. The majority were males and smokers (95%). Commonest comorbidities were musculoskeletal (30%) and CVD (37%). Infective exacerbations contributed to 20%. More than one was present in few cases. The overall course of the disease was related to patient age, smoking pack year, genetic susceptibility, diabetes and above all treatment compliance. Mortality in COPD is more often cardiac rather than respiratory causes. Regular physician/community medical education is recommended at regional levels.

**P3578**

**Evaluation of the gas exchange abnormalities in COPD patients with the use of capnometry**

Yurii Feshchenko, Liudmyla Iashyna, Svitalya Ishchuk. Diagnostic, Therapy and Clinical Pharmacology of Lung Diseases, National Institute of Phthisiology and Pulmonology named after F.G. Yanovskiy AMS of Ukraine, Kiev, Ukraine

**Background:** COPD is airway disorder associated with an abnormal inflammatory response of the lungs to noxious particles or gases. Due to progressive nature of the disease the respiratory failure verification is of great importance.

**Result:** In pts I and II gr. hadn’t distinctions in quantitative and qualitative description of sputum: light lucid sputum in little quantity or no. Increase of bronchoobstruction in III gr. was accomplished by considerable changes character, viscosity and quantity of sputum (amplitude ratio rich clouds).

**Conclusions:** 1. Progress of COPD is characterized growth of degree and expressed of atrophy displays in the mucous membrane of bronchial tree.

2. Structural change of the mucous membrane of bronchial tree cause the change of character and amount mucus.
Objectives: This study aimed to investigate capnometry indices in patients with stable COPD (GOLD II-IV) compared to healthy subjects.

Methods: Bodyplethysmography, capnometry. Data are presented as mean±SD.

Results: A total of 87 subjects (age 56±2; 59% male) were enrolled: COPD group (n=42, mean%FEV1 =39.5%), control group (n=45, mean%FEV1 =93.7%). All subjects were performed bodyplethysmography and capnometry; we compared the results between groups. All bodyplethysmography and capnometry indices of COPD subjects were significantly (p<0.05) different from control. The mean values Rtot,% was 241.6±12.7 and 117.7±8.4, IC,% was 81.1±2.2 and 110.9±3.2, IFV,% was 189±9 and 101±5 in COPD and control group respectively. The capnometry results was Vde/VT 33.8±1.2 and 25.5±1, PECO2, kPa was 2.8±0.1 and 3.2±0.1, end-expiratory lung volume, 1 was 5.1±0.2 and 4.7±0.2, FE2CO2% was 3.0±0.1 and 3.4±0.1 in COPD and control group respectively.

Conclusions: Capnometry might be a useful tool to detect the respiratory failure in COPD patients.

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The indices of body composition (IBC) in chronic obstructive pulmonary disease (COPD)

Aliaksandr Makarevich1, Sviatlana Lemesheuskaya1, Natalja Vasieljeva2.
1Internal Diseases, Belarusian State Medical University, Minsk, Belarus;
2Department of Osteoporosis, Republic Medical Rehabilitation Centre, Minsk, Belarus.

The aims: To analyze of IBC at different stages of COPD as well as the relationships between the IBC, lung function and smoking status.

Material and methods: Bone mineral content (BMC), Fat mass (FM) and Lean mass (FFM, excluding BMC) were detected by dual-energy X-ray absorptiometry. FM, FFM and BMC were expressed as the ratio to height squared to obtain indices FMI, FFMI and BMCI respectively. The pts (aged 40-69 yrs) were divided into 3 groups according to COPD severity. The 1st group was made of 14 men (GOLD I stage; mean age 55 yrs; FEV1, 78%; BMI 27 kg/m2, smokers 68%; pack/ys smoking index 20); the 2nd included 43 men (GOLD II stage; mean age 57; FEV1 65%; BMI 28 kg/m2, smokers 80%; pack/ys yrs 21); the 3rd - 20 men (GOLD III stage; mean age 60; FEV1 41%; BMI 24 kg/m2, smokers 84%, pack/ys yrs 28). The control group was formed of 15 healthy men (mean age 56 yrs, mean BMI 26 kg/m2, smokers 66%, pack/ys yrs 20).

Results: The FMI value was decreased during COPD progression (from 21.3 kg/m2 in the 1st group to 17.7 kg/m2 in the 3rd group; p<0.05). We revealed the significant correlations between: COPD severity and FMI (r=0.54); FMI, FFMI and pack/ys (r= -0.37; -0.38; - 0.3 respectively). FFMI level was higher in 1st group and the control group was similar (1.06 kg/m2 ) and it was significantly higher than in 2nd and 3rd groups (1.01 and 0.89 kg/m2 respectively). Pts of 3rd group had a lower FMI as compare with the pts of 1st and 2nd groups (4.25 vs. 8.28 and 9.72 respectively; p<0.05).

Conclusions: The dynamics of IBC changes can probably reflect COPD progression.

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Evaluation of different domains of the Saint George’s respiratory questionnaire (SGRQ) according to the severity levels of chronic obstructive pulmonary disease (COPD)

Filipe Athayde1, Rosana Sampaio2, Bruna Vieira2, Danielle Vieira1, Raquel Britto2, Verônica Parreira2.
1Graduation Program in Rehabilitation Sciences, Universidade Federal de Minas Gerais, Belo Horizonte, Minas Gerais, Brazil; 2Department of Physical Therapy, Universidade Federal de Minas Gerais, Belo Horizonte, Minas Gerais, Brazil.

Relevance: Spirometric parameters used to determine disease severity may not be appropriate to infer about the different components of functioning in patients with COPD.

Purpose: To compare and correlate the scores of the different SGRQ domains according to the GOLD severity levels in patients with COPD.

Methods: A cross-sectional study was conducted at a hospital university. Comparison (Kruskal-Wallis) and correlation (Spearman) tests were used after performing normality tests. This study was approved by the Ethics Committee.

Results: Table 1 summarizes the data for each GOLD stage. No significant differences were observed between stages I and II or I and III for any of the SGRQ domains. There were no significant correlations between FEV1 and the SGRQ scores.

Conclusions: The results suggest that there is no linearity between the severity levels of COPD and the SGRQ scores, including the activity and psychosocial impact domains.