87. Risk factors for COPD

P962
Incidence and burden of major comorbidities among individuals with COPD: a comprehensive analysis using data from primary care
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Background: Previous studies suggest that cardiovascular disease (CVD), stroke and diabetes mellitus (DM) are more common in patients with COPD than the general population. Our aim was to quantify these associations and to investigate the relation between COPD and development of first acute ateriovascular events.

Methods: The computerised primary care records of 1,204,110 members of the general population aged 35 years or over on 25th February 2005 were searched for recordings of each disease. Data were analysed using multivariate logistic regression. Cox regression was used to determine whether individuals with COPD were at increased risk of acute myocardial infarction (MI) and stroke.

Results: Physician-diagnosed COPD was associated with an increased risk of CVD (Odds Ratio (OR) 4.98, 95% Confidence Interval (95% CI) 4.81, 5.16; p<0.001), stroke (OR 3.34, 95% CI: 3.17, 3.52; p<0.001) and DM (OR 2.04, 95% CI: 1.95, 2.14; p<0.001). After adjusting for confounding by sex and smoking status, and stratifying for age, the greatest increase in rate of acute ateriovascular events was found in youngest age groups; the hazard ratio (HR) for acute MI was 12.53 (95% CI: 3.98, 39.48; p<0.001) and for stroke, 3.95 (95% CI: 0.98, 15.90; p<0.001), compared with the oldest age group.

Conclusions: People with COPD are at an increased risk of arteriovascular disease and DM. These associations are strongly related to age, with the greatest relative risk being in the youngest patients. National COPD guidelines and models of care need to adapt to include an integrated approach to addressing these comorbidities.

P963
Environmental tobacco smoke (ETS): lifetime exposure related to respiratory health in never smoker Italian women
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Background: Few studies investigated ETS effects on health according to cumulative lifetime exposure.

Aim: To assess the associations between ETS lifetime exposure and current respir. dis.

Methods: Analyses concern 1977 never smoker women (mean age 46). According to duration, frequency, self-reported exposure at work, home or in other places, a cumulative ETS exposure score was computed. Based on tertiles, women were classified in mildly, moderately, heavily exposed.

Results: There are dose-response associations between exposure levels and respiratory disorders.

<table>
<thead>
<tr>
<th>Variable</th>
<th>(daily)</th>
<th>(weekly)</th>
<th>(monthly)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dyspn (1° grade)</td>
<td>1.17 (0.77-1.77)</td>
<td>1.51 (0.99-2.32)</td>
<td>1.85 (1.21-2.84)</td>
</tr>
<tr>
<td>Dyspn (4° grade)</td>
<td>1.41 (0.74-2.70)</td>
<td>1.70 (1.04-2.82)</td>
<td>2.41 (1.26-4.60)</td>
</tr>
<tr>
<td>Ch. cough</td>
<td>1.31 (0.73-2.36)</td>
<td>1.48 (0.84-2.72)</td>
<td>2.18 (1.21-3.55)</td>
</tr>
<tr>
<td>COPDox</td>
<td>1.31 (0.90-1.89)</td>
<td>1.48 (1.01-2.18)</td>
<td>2.05 (1.40-3.00)</td>
</tr>
<tr>
<td>Curr Asthma</td>
<td>2.51 (0.58-10.95)</td>
<td>3.55 (0.62-15.43)</td>
<td>3.76 (0.87-16.30)</td>
</tr>
<tr>
<td>Curr Rhino-Conjunctivitis</td>
<td>1.10 (0.74-1.63)</td>
<td>1.24 (0.82-1.87)</td>
<td>1.63 (1.07-2.41)</td>
</tr>
<tr>
<td>Any Respir Sympt</td>
<td>0.95 (0.67-1.35)</td>
<td>1.09 (0.76-1.56)</td>
<td>1.51 (1.04-2.17)</td>
</tr>
</tbody>
</table>

Conclusions: Our study indicates that ETS exposure is a risk factor for respiratory/allergic disorders with a dose-response effect. Preventing ETS exposure would reduce the burden of such disorders.
**P964**

**Associations between passive smoking in childhood and COPD among adult smokers**

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**Background:** Adult and prenatal exposures to passive smoking are acknowledged risk factors for chronic obstructive pulmonary disease (COPD). However, little is known on associations between passive smoking during childhood and adult COPD.

**Aims:** To assess if passive smoking during childhood is associated with COPD in a population of adult smokers.

**Methods:** In the Bergen COPD Cohort Study, 353 current smokers aged 40 to 75 yrs answered questionnaires as part of the baseline examination in 2006. Differences between cases and controls were assessed using chi square test for categorical variables and t test for continuous variables. We performed logistic regression analysis on case/control status, and adjusted for sex, age, pack years, body mass index (BMI), educational level, occupational exposure to dust, and adult exposure to passive smoking.

**Results:** A majority of both cases and controls were exposed to passive smoking during childhood (73% and 69%, respectively). In crude analyses, there was no significant association between childhood passive smoking and COPD. After adjusting for possible confounders, however, subjects exposed to childhood passive smoking had OR (95% CI) 2.9 (1.3, 6.2) compared with unexposed subjects. Childhood passive smoking was a more pronounced risk factor than both occupations exposure to dust (OR 2.3 (1.1, 4.5) and adult passive smoking (OR 0.7 (0.4 - 1.4).

**Conclusions:** In a case-control study of adult current smokers, we found that subjects who were exposed to passive smoking during childhood had 3 times higher odds for COPD than unexposed subjects. This suggests that childhood passive smoking is of more importance for COPD than previously anticipated.

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**P965**

**Air travel habits in patients with COPD**

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- Anna Akvorn
- Tomas M.L. Eagan
- Morten Ryg
- Jon A. Harald
- Per S. Bakke
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The degree and duration of in-flight hypoxemia in COPD patients depend on flight duration and quality of adverse events decreases with the flying frequency and the severity of the patients’ lung disease.

**Aim:** To perform a survey of patient characteristics and air travel habits in a COPD population.

**Methods:** Patients were recruited from the Bergen COPD Cohort Study in Norway. In 2007/08, patients completed a questionnaire on air travel habits and symptoms while flying during the previous two years. Data on spirometry, blood gas analyses and a 6-min walk test were obtained from previous visits during the two year period.

**Results:** 391 COPD patients (61% men) were included, mean ± SD age was 62 ± 9 yrs, 54% had travelled by air during the study period. As compared with those who did not fly, the patients who flew were younger (61.9±6.7 y vs 63.9±6.7 y, p<0.01), had higher FEV1 (55.6±13.5 vs 49.3±16.3% of predicted values, p<0.01), and higher PaO2 (9.5±1.0 vs 9.1±1.3 kPa, p<0.01). Those who flew desaturated less during a walk test (92±4.7 vs 97±8.6%, p<0.01). 47% of those who flew had SpO2 92-95% at sea-level. Of the total sample, 9% dared not fly due to their lung disease, and 3% were advised against air travel by their physician. 48% flew 2-4 times during the study period, and the most frequent flight duration was 3-6 hours. 28.4% experienced symptoms while flying. **Conclusions:** During a two year interval, 54% of the COPD patients travelled by air. Those who flew were younger, had higher FEV1%pred and PaO2 than those who did not fly. Almost half of the population who flew had SpO2 between 92-95%, and should according to previous studies, be considered for further pre-flight evaluation. One third experienced symptoms when flying.

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**P966**

**Atopy and work-related exposure as risk factors of COPD in a cross-sectional study of farmers**

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**Background:** Farmers have increased risks of respiratory morbidity. The role of chemical and biological agents and atopy in the development of COPD has not been fully established.

**Material and methods:** We assessed lung function in 4,735 Norwegian farmers. COPD was defined by the 5% lower limit of normal of FEV1/FVC excluding subjects with active asthma. Atopy was assessed by the Phadiatop test in a stratified sample (n=1,213). Personal exposures to 12 chemical and biological agents were measured on 127 randomly selected farms.

**Results:** Farmers were more likely to have COPD than crop farmers (OR 1.4, 95% CI 1.1-1.7). FEV1 (r=41 ml, 95% CI 75; -7) reduced, but not FVC. Exposure to several agents were associated with COPD and FEV1, but not FVC. Ammonia was most strongly associated with COPD and hydrogen sulphide with FEV1, when adjusting for co-exposure. Biological agents could not be tested in multiple exposure models because they were too highly correlated. Although atopic farmers had a lower FEV1 (r=87 ml, 95% CI 170; -7) atopy was not directly associated with COPD. Nonetheless, the effect of livestock farming on COPD was substantially greater in atopic farmers, OR 5.5 (95% CI 1.4-21), than in non-atopic farmers, OR 1.4 (95% CI 0.92-2.1). The effect of specific exposures was also substantially greater in atopic farmers than in non-atopic farmers. No such differences were found for FEV1.

**Conclusions:** Farmers have an increased risk of COPD and reduced FEV1. Both outcomes were associated with livestock production and exposures but specific agents could not be identified. Atopic farmers had a greater risk of having farming-related COPD than non-atopic farmers.

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**P967**

**Relative and attributable risks associated with COPD in the BOLD study sites**

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**The Burden of Lung Disease (BOLD) project is assessing the prevalence of chronic obstructive pulmonary disease (COPD) in general populations over the age of 40. Data are available from 14 surveys. Each centre was asked to provide data on 600 subjects, and the number of responders ranged from 563 to 1349. Response rates were above 70% in Guangzhou, Adana, Krakow and Bergen and less than 50% in Lexington and Sydney.** Sixty-eight percent of the men had ever smoked (range 42-83%) and 46% of the women (6-61%). COPD was assessed as the ratio of FEV1 to FVC after bronchodilator. There was a strong, heterogeneous, non-linear effect of pack years of smoking. However, beyond this effect there were still significant associations with age, level of education, hospitalisation with a respiratory problem before 10 years of age, passive smoking and a family history of COPD. This was so whether measured continuously or as a binary measure taking the lower limit of normal from the NHANES data as the criterion for the disease. The effect of tuberculosis (TB) was significant when the binary measure was used, but not with the continuous measure, and the effect of years worked in a dusty job was significant for the continuous but not for the binary measure. The effect of smoking dominates the attributable risk percentage, and ranges from 60% in Sydney (95%CI 40%-80%) to 29% in Manila (95% CI 5-53%). It is significant in all centres.** COPD is associated with a significant proportion of the disease is due to passive smoking. **Doctor diagnosed TB is estimated to account for a significant proportion of obstructive lung disease in Cape Town (6%) and London (7%).**

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**P968**

**Gender difference in the association of CRP and lung function decline. A longitudinal population-based study**

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- Thorarin Gisladottir
- Vilhjalmur Godmundsson
- Bryndis Benediksdottir
- Isfjol Oddsson
- Thor Aspelund
- Bjarni Thjodleifsson
- Christur Jonsen

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**Background:** Impaired lung function is an important predictor of cardiovascular morbidity and mortality. CRP is an inflammatory marker of both respiratory and cardiovascular diseases. CRP has been shown to have stronger association to lung function impairment in men than in women. Our aim was to study possible gender differences in the longitudinal association between CRP and lung function.

**Methods:** The analysis included 479 men and 579 women (mean age 28, range 19-45) from the Reykjavik prospective heart study. Spirometry, body mass index and CRP measurements were performed at baseline and at follow-up. The mean follow-up time was 27.4± (16-30) years.

**Results:** CRP at baseline (<2.1 ml/L-year per SD of logCRP; p=0.02) and change in CRP was associated with a more rapid decline in FEV1 (<2.1 ml/L-year per SD change, p=0.01) in men, whereas no such association was found in women. On the other hand change in BMI was significantly related to decrease in FEV1 in women (p<0.001) but not in men (p=0.06), whereas smoking was related to FEV1 decline in both sexes.

**Conclusion:** This investigation shows that determinants of FEV1 decline differ between men and women. Systemic inflammation is more closely related to lung function decline in men than in women, whereas change in BMI is a more clearly associated to loss in lung function in women.
Frequency of self-reported COPD exacerbation and airflow obstruction in five Latin American cities: the PLATINO study

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Recurrent exacerbations are common in COPD. Limited information exists regarding exacerbation frequency in COPD from epidemiologic studies. We examined the frequency of self-reported exacerbations and the factors influencing exacerbation frequency in COPD in a population-based study conducted in Latin America. We used post-bronchodilator FEV1/FVC<0.70 to define COPD. Exacerbation was self-reported and defined by symptoms (deterioration of breathing that required at least usual daily activities or caused missed work). Spirometry was performed in 5,314 subjects. There were 759 COPD subjects, 18.2% reported ever having had an exacerbation, 7.9% an exacerbation and 6.2% an exacerbation requiring at least a doctor visit within the past year. The proportion of individuals with an exacerbation increased by GOLD stages (from 4.2% in stage 1 to 28.9% in stages 3 and 4). Self-reported exacerbation rate was 0.58 per year. The rate of exacerbations requiring at least a doctor visit and length of stay in hospital due to exacerbations also increased as COPD progressed. Factors associated with having an exacerbation were dyspnea (OR 9.5; CI 1.277:12.5, p<0.013), prior asthma diagnosis (OR 5.19, 95%CI 2.47:10.88, p<0.001), receiving any respiratory therapy (OR 3.03, 95%CI 1.40:6.56, p=0.005), and GOLD stages 3 and 4 (OR 2.27, 95%CI 1.05:11; p=0.045).

The results indicate that the proportion of COPD subjects with self-reported exacerbations increases as the disease progresses. Dyspnea, prior asthma diagnosis, receiving any respiratory therapy, and more severe obstruction were associated with having an exacerbation.

P970
Diurnal variation of symptoms and impact on activity in severe COPD: a pan-European cross-sectional study

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Background: A few studies have reported circadian variation in lung function in COPD but little is known about whether patients perceive any diurnal variation in their symptoms.

Objective: To investigate whether patients with severe stable COPD report diurnal variation of their symptoms and impact upon daily activities.

Methods: Cross-sectional epidemiological study conducted in 17 European countries. From July 2008 to the end of January 2009, pulmonologists and GPs recruited 3561 patients with COPD (GOLD stage III and IV), stable for 3 months pre-study. Patients were interviewed by telephone.

Results: Results on the 2150 patients interviewed by 21 January 2009 (mean age 67.4±9.8; males: 78.4%) are reported here. Most exacerbations occurred during the period of the day when symptoms are perceived as the most troublesome, as shown in the table below.

<table>
<thead>
<tr>
<th>Period of the day when symptoms are the most troublesome*</th>
<th>% of patients experiencing the symptom in the preceding week</th>
<th>% of patients among experiencing the symptom</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morning</td>
<td>Afternoon</td>
<td>Evening</td>
</tr>
<tr>
<td>Breathlessness</td>
<td></td>
<td></td>
</tr>
<tr>
<td>66.1</td>
<td>23.5</td>
<td>19.4</td>
</tr>
<tr>
<td>Phlegm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>73.2</td>
<td>17.4</td>
<td>17.9</td>
</tr>
<tr>
<td>Cough</td>
<td></td>
<td></td>
</tr>
<tr>
<td>61.3</td>
<td>14.7</td>
<td>18.5</td>
</tr>
<tr>
<td>Wheezing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>41.5</td>
<td>17.9</td>
<td>27.0</td>
</tr>
<tr>
<td>Chest Tightness</td>
<td></td>
<td></td>
</tr>
<tr>
<td>28.4</td>
<td>26.3</td>
<td>24.2</td>
</tr>
</tbody>
</table>

*Several choices possible

Usual daily morning activities such as getting out of bed, washing, drying and dressing were affected by symptoms in 34.2%, 41.0%, 36.1% and 41.3% of the patients respectively.

Conclusion: Preliminary data indicate that symptoms predominantly affect severe COPD patients in the morning and interfere with essential activities. This has implications for the development of therapeutic strategies.
Results: In a cohort of 53,191 COPD patients, we identified 2401 cases of carotid stenosis. There was no apparent association between SFC prescriptions and increased risk of carotid stenosis, regardless of timing or duration. A lack of dose response was observed for FFE average daily dose in the prior year, relative to the low dose group: medium OR: 1.1 (95%CI: 0.9, 1.4); high OR: 1.2 (95%CI: 0.9, 1.5); very high OR: 1.2 (95%CI: 0.9, 1.7).

Conclusions: In this case-control analysis nested within a population-based COPD cohort from the UK, we did not observe an association between SFC and risk of carotid stenosis or a dose response relationship between SFC and very high daily dose and increased risk of carotids.

P974 Underweight defined as low BMI in COPD – results from population studies
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Background: Low BMI in COPD is associated with a poor prognosis. The prevalence of underweight in COPD is poorly investigated and the pattern of risk factors is not well established.

Aims: To study the prevalence of underweight, defined both as BMI<18.5 (WHO-criteria) and BMI<20.0 in an epidemiological setting and to analyse the correlation between BMI and COPD by severity, sex and age.

Methods: The study is based on pooled data from four cohorts of the Obstructive Lung Disease in Northern Sweden (OLIN) Studies including 5180 subjects of the general population with records of lung function, length and weight. Covariates used in multivariate analyses include age, sex, smoking habits, socio-economic status, area of living, heart disease, hypertension, diabetes, use of oral corticosteroids and coexisting respiratory symptoms.

Results: Underweight defined as BMI<18.5 was found in 1.3% among subjects with COPD according to GOLD criteria and in 6.8% of those without COPD. The corresponding figures for BMI<20.0 were 4.2% and 3.6%. In bivariate analyses there were significant association between BMI groups and COPD stages. In analysis of means, BMI was lower in higher COPD stages. COPD stage III yielded an OR of 3.8 (95%CI 1.5-9.8) for BMI<20 with female sex, age <50 years and current smoking adjusted significantly with underweight in the multivariate model. Similarly COPD stage IV yielded an OR of 8.1 (95%CI 2.1-31.5). COPD stage IV yielded an OR of 27.2 (95%CI 4.9-151.6) for underweight defined as BMI<20.0.

Conclusion: COPD, particularly in stage III an IV, was significantly associated with BMI<20.0 and BMI<18.5 even after correcting for covariates.

P975 Genetically elevated ace activity is not associated with ischaemic heart disease, hypertension, or physical activity in COPD
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Background: The angiotensin-converting enzyme (ACE) gene is a potential candidate gene for risk of cardiovascular disease. Among patients with COPD, the odds ratio (95% confidence interval) for ischaemic heart disease was 1.1 (0.8-1.6) for ID and 1.2 (0.8-1.7) for DD compared with II individuals; corresponding odds ratios for hypertension were 1.1 (0.7-1.5) and 0.8 (0.5-1.2), and for low physical activity 1.1 (0.8-1.6) and 0.8 (0.6-1.1). In the general population, the odds ratios for asthma was 1.2 (0.9-1.4) for ID and 1.2 (0.9-1.5) for DD vs. II individuals; corresponding odds ratios for COPD were 0.9 (0.8-1.1) and 1.0 (0.8-1.2). The results were similar upon adjustment for sex, age, smoking status, body mass index, total cholesterol and ACE inhibitors.

Conclusions: These data suggest that lifetime genetically elevated ACE activity is not a major risk factor for ischaemic heart disease, hypertension, or low physical activity in patients with COPD, nor with overall risk of asthma or asthma.

P976 A prospective study on COPD and risk of mortality five years later
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Background: COPD is a leading cause of morbidity and mortality worldwide, affecting approximately 15% of middle-aged adults living in Latin America. However, there are relatively few data on the long-term consequences of COPD, particularly in low and middle-income countries.

Objectives: To explore the association between COPD and risk of mortality five years later.

Methods: 885 adults aged 40 years or more were examined in 2003 as part of the PLATINO study phase 1. COPD diagnosis was based on ICD-9 codes 491-492. The GOLD stages were also analyzed. Subjects were re-examined in 2008 as part of the PLATINO study phase 2, and mortality systems were monitored.

Results: Out of the 885 adults examined in 2003, 71 are known to have died. Among 711 COPD-free subjects in 2003, only 5.3% died in the period, while the equivalent percentage was 18.4% for those with COPD in 2003. In the unadjusted analyses, the risk of death for COPD subjects was 3.35 times greater than for non-COPD individuals. After adjustment for sex, age and schooling, the risk was reduced to 2.08, but was still highly statistically significant (p=0.002). In comparison to subjects with no symptoms, the risk of death was 1.26 times greater for those with symptoms, but normal lung function in 2003, in stage I of the GOLD classification, 4.58 times greater for those in stage II, 15.7 times greater for those in stage III and 20.9 times greater for those in stage IV.

Conclusions: COPD is a strong risk factor for mortality, and therefore, its prevention and adequate treatment are urgently required in Latin America.

P977 The impact of dynamic lung hyperinflation on morbidity and mortality in patients with chronic obstructive pulmonary disease
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Aim: Dynamic lung hyperinflation (DH) has important clinical consequences in patients with COPD, however, the knowledge about the long term clinical consequences of DH is lack. We aimed to assess the impact of DH on morbidity as measured by emergency visits and hospital admissions as well as exacerbations and also mortality in patients with COPD during a 4 year period.

Methods: We recruited 73 stable COPD patients, diagnosed according to GOLD criteria, from October 2004 to June 2005. The follow-up ended in January 2009, the mean follow-up period was 45 (range 21-50) months. The relationships of different respiratory parameters (FEV1%, body mass index (BMI), six minute walking test distance (6MWT), static hyperinflation as measured by IC/TLc, dynamic hyperinflation as measured by A(CT/TLc)-PAO2 and PaCO2 with emergency visits and hospital admissions because of exacerbations and also with respiratory and all-cause mortality were assessed.

Results: During the follow-up there were 8 (11%) deaths. On the basis of the multivariate regression analysis (Cox proportional hazards model), dynamic hyperinflation (HR=1.4, 95%CI=1.09-1.84, p=0.009) and 6MWT distance (HR=0.98, 95%CI=0.97-0.99, p=0.006) were found to be independent predictors of all-cause and respiratory mortality. DH was also significantly related to morbidity as emergency visits (n=28, p=0.001) and hospital admissions (n=38, p=0.016).

Conclusion: Dynamic hyperinflation is a good and independent predictor for mortality and also related to morbidity in COPD patients. We propose that dynamic hyperinflation be considered in the assessment of long term clinical consequences of patients with COPD.

P978 Description of gold-defined COPD severity stages in UK primary care
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Descriptive epidemiology studies of chronic obstructive pulmonary disease (COPD) disease severity mostly originate from general population cohort studies. This study aimed to describe the prevalence of disease severity in COPD, as defined by the Global Initiative for Chronic Obstructive Lung Disease (GOLD), in a primary care setting by analyzing electronic medical records in the General Practice Research Database (GPRD). A cohort of COPD patients with a diagnosis between 1998 and 2006 was identified. Patients aged 35 years and older with a spirometry confirmed COPD diagnosis (FEV1/FVC <0.7) were selected. The most recent FEV1 percent predicted measurement available during 2005 to 2007 was used to assess disease severity, defined as GOLD stage I: FEV1>80%, predicted; II: 50%≤FEV1<80%; III: 30%≤FEV1<50%; IV: <30%. Considering

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54,504 COPD patients identified in the GPRD, 29,587 (54.3%) had a spirometry confirmed diagnosis. A total of 20,493 patients were assigned a GOLD Stage based on their FEV1 measurement (see Table): 9,984 cases were excluded because a valid FEV1 measurement was not available during 2005 to 2007. The majority of diagnosed COPD patients, identified in the GPRD, were classified as GOLD II. Furthermore, COPD GOLD classification did not vary remarkably by gender and age.

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High prevalence of undiagnosed COPD in patients with cardiovascular disease
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The prevalence of chronic obstructive pulmonary disease (COPD) in patients with cardiovascular disease (CVD) is unknown, and whether or not COPD is adequately diagnosed and treated in these patients has not been investigated before.

Methods: We compared clinical and spirometric data in three groups of individuals. Two of them were participants in the follow-up of an ongoing population-based study investigating the distribution of CVD and COPD risk factors in the general population of the Balearic Islands, Spain, grouped according to the presence or absence of CVD by individual review of their primary care medical charts and hospital records. The third group included patients with coronary artery disease (CAD) confirmed by coronaryography regularly visited at a tertiary referral university hospital. COPD was defined as a post-bronchodilator ratio FEV1/FVC < 0.70 and staged according to the GOLD guidelines.

Findings: We studied 450 population participants without CVD, 52 population participants with CVD, and 119 hospital patients with CAD. The prevalence of COPD in these three groups was 17.5% (95% CI 14.0-21.0), 19.2% (95% CI 8.1-30.7) and 33.6% (95% CI 25.0-42.2), respectively (p < 0.05). Under-diagnosis of COPD ranged from 60% in population participants with CVD up to 87.2% in hospital patients with CAD. Sixty percent of those with spirometrically confirmed COPD (in all three groups) did not receive any respiratory treatment.

Interpretation: These results show that COPD is frequent in individuals with CVD, particularly in those with CAD attended in the hospital, that it is largely under-diagnosed and, therefore, highly undertreated.

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Respiratory effects of occupational exposures and smoking in tile factory workers
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Background: Workers in tile production are exposed to kaolin containing silica. Silica exposure has been linked to lower lung function, but there are just a few studies in tile workers. Occupational dust exposure in general has been suggested to have synergistic effect with smoking.

Aims: The objectives of this study were to investigate the relations of occupational exposures in tile industry to respiratory function and smoking function and to evaluate potential interaction with smoking.

Methods: A cross-sectional study was conducted on 232 workers (response rate 100%) in a tile factory and 76 office workers (73%) from altogether 4 factories in Thailand. The participants answered a questionnaire on respiratory health and occupational exposures and performed spirometry.

Results: The risk of breathlessness and wheezing were increased in factory workers compared to office workers, wheezing especially in those factory workers with long duration of exposure. There was a significant dose-response relation between duration of dust exposure and FEV1 and FVC level. The adjusted effect of ≥ 21 years of exposure on FEV1 was -240 ml (<00 to -380) and on FVC -300ml (-140 to -460). The adverse effect of dust on lung function was larger in current smokers, suggesting a synergistic effect that was borderline significant.

Conclusions: Our study provides evidence that long-term exposure to dust in tile industry is related to significant lung function reduction. There was a suggestion of synergistic effect between dust exposure and smoking. The results suggest that tile factories should consider measures to reduce dust exposure. Smoking cessation should be promoted to further prevent harmful effects of dust exposure.

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Median and 5-year survival of patients with COPD stage IV – a Swedish prospective closed cohort study
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Background: The prevalence of COPD stage IV is estimated to 0.1-0.2%. Little is known about the survival of patients with COPD stage IV.

Objective: The study aim was to estimate the survival of patients with COPD stage IV.

Methods: A cross-sectional point-prevalence study was conducted 2005 to identify and describe all patients with physician-diagnosed COPD stage IV in the city of Östersund, Sweden (Stenfors Chest 2006). These 70 patients are now monitored in a prospective closed cohort study. Their emergency and elective hospital visits are registered. The subjects are invited to an yearly out-patient check-up. The time point subjects were diagnosed with stage IV-disease was identified through retrospective analysis of medical records. Medical records and death certificates are used to identify date and place of death.

Results: The cohort consist of 41 females and 29 males. Mean age at diagnosis of stage IV-disease was 67.6 (SD 10.7) years. The cohort have a median survival time of 8.2 years and a 5-year survival of 49.3% after diagnosis of COPD stage IV.

Figure 1

Discussion: Patients diagnosed with COPD stage IV have a surprisingly long median survival time. The study cohort has a complete follow-up. The study is biased towards patients with hospital-based diagnosis of COPD stage IV. The attention patients receive taking part in a prospective study may influence their survival.