

(95%CI 0.3-0.75) and 0.57 (95%CI 0.36-0.77) respectively, whilst CURB65 [AUC 0.66 (95%CI 0.45-0.86)] and NHAP index [AUC 0.6 (95%CI 0.39-0.8)] showed superior accuracy in predicting mortality.

Conclusion: The CPIS, PCT and CRP are reliable for the diagnosis of NHAP. PCT, CRP and CURB65 were accurate for predicting in-hospital mortality in patients with NHAP.

180

COPD case finding in primary care: A pilot study in the West Midlands, UK
 Shamil Haroon¹, Rachel Jordan², Peymane Adab², Carl Griffin¹. ¹Public Health, Sandwell Primary Care Trust, West Bromwich, United Kingdom; ²Public Health, Epidemiology and Biostatistics, University of Birmingham, Birmingham, United Kingdom

Aim: To compare the effectiveness of targeted versus opportunistic case finding for COPD in primary care.

Background: COPD is an increasing cause of morbidity and mortality, and underdiagnosis is common. The recent draft Clinical Strategy for COPD for the UK NHS recommended piloting case finding.

Methods: Patients from two general practices, aged between 35 and 79 years with a smoking history and no prior diagnosis of COPD or asthma were randomised to either a targeted or opportunistic case finding arm. Patients in the targeted arm were posted a respiratory questionnaire. Those in the opportunistic arm received a questionnaire when they next presented at their general practice over a 6 month period. Patients with positive symptoms were invited to attend spirometry. Those with an FEV1%predicted<80% and an FEV1/FVC<0.7 were diagnosed with airway obstruction and referred to their GP or specialist respiratory nurse.

Results: 351 (32.7%) of 1073 distributed questionnaires were returned. 247 (70.4%) participants who returned the questionnaire were symptomatic. Of those who underwent spirometry 14.3% were identified with airway obstruction. 10 out of 815 patients (1.23%) contacted in the targeted arm and 4 out of 258 (1.55%) in the opportunistic arm were identified with airway obstruction (difference 0.32%, 95% CI -1.37%, 2.01%). Overall 77 patients had to be contacted to identify one patient with airway obstruction; 82 in the targeted and 65 in the opportunistic arm.

Conclusion: 17 more patients had to be contacted in the targeted than in the opportunistic arm to identify one patient with airway obstruction in this pilot. Further work is needed with a wider range of practices to determine which approach is more efficient.

181

High rates of over-treatment of COPD in primary care: What risks to patients and costs to health services?

Helen Booth¹, Sofia Georgopoulou¹, Hilary Pinnock², Hannah Thornton¹, Patrick White¹. ¹Primary Care and Public Health Sciences, King's College London, London, United Kingdom; ²Allergy and Respiratory Research Group, University of Edinburgh, Edinburgh, United Kingdom

Introduction: GOLD guidelines recommend inhaled medications for COPD based on disease severity. Undertreatment denies patients the benefits of effective therapy. Overtreatment with inhaled corticosteroids (ICS) risks side-effects including both local and increased risk of pneumonia; in combination with long-acting beta-agonists they also incur considerable financial waste. This study assessed adherence to GOLD guidelines in primary care prescribing of inhaled COPD medication in South-East London.

Methods: Data on management of COPD patients were extracted in 65 general practices in Lambeth and Southwark including spirometry, inhaled medications and recent COPD exacerbations. Patient severity was classed by GOLD stage and appropriateness of prescribing was assessed.

Results: 4804 COPD patients were identified. Spirometry was recorded for 2941 (61%), of whom 778 did not meet GOLD diagnostic criteria. 2163 (45%) were included in the analysis. 62% were inappropriately treated according to GOLD. The most common deviation was over-prescription of ICS in GOLD I/II (55%), or III/IV with no history of severe exacerbations (56%). 793 (64%) cases of over-treatment involved LABA+ICS with a mean cost of €46.52/item.

Conclusion: Diagnosis of COPD was made without spirometry in the majority of COPD patients in primary care. Deviation from GOLD in prescribing was substantial. The potential for harm due to ICS over-prescription in over half of patients with a confirmed diagnosis of COPD must give considerable cause for concern, besides the unjustified costs.

182

Missed opportunities to diagnose COPD

David Price^{1,2}, David Halpin³, Robert Winter^{4,5}, Susan L. Hill⁴, Eric Bateman⁶, Daryl Freeman⁷, Dermot Ryan⁸, Matthew Kearney^{4,9}, Kevin Holton⁴, Annie Burden², Julie von Ziegenweid², Laurence Mascarenhas², Alison Chisholm², Rupert Jones¹⁰. ¹Centre of Academic Primary Care, University of Aberdeen, Aberdeen, United Kingdom; ²Observational Research, Research in Real Life, Norwich, United Kingdom; ³Royal Devon & Exeter Hospital, NHS Foundation Trust, Exeter, United Kingdom; ⁴Respiratory Programme, Department of Health, London, United Kingdom; ⁵NHS Future Review, East of England Strategic Health Authority, Cambridge, United Kingdom; ⁶Respiratory Medicine, University of Cape Town, Cape Town, South

43. Early diagnosis in primary care

179

Late-breaking abstract: Evaluation of CRP, PCT, clinical pulmonary infection score and pneumonia severity scores for the diagnosis and prognosis of nursing home acquired pneumonia

Ilias Porfyridis, Georgios Georgiadis, Paris Vogiazianos, Andreas Georgiou. Pulmonary Department, Nicosia General Hospital, Nicosia, Cyprus

Introduction: Nursing home acquired pneumonia (NHAP) represents a distinct group of respiratory infections with different risk factors, clinical presentation and higher mortality than CAP.

Aim: To evaluate the diagnostic value of clinical pulmonary infection score (CPIS), CRP and PCT and compare the accuracy of CURB-65, pneumonia severity index (PSI), nursing home acquired pneumonia (NHAP) index, SMART-COP and SOAR in predicting in-hospital mortality of NHAP.

Methods: 49 residents in nursing homes admitted to pulmonary department were enrolled in the study. Pneumonia severity scores were recorded. CRP and PCT were measured by immunonephelometry and immunochromatography respectively. **Results:** 39 patients were diagnosed with NHAP (group A) and 10 with other pulmonary disorders (group B). Mean ± SE CRP was 16.53±1.65mg/dl in group A and 5.26±2.56mg/dl (p=0.002) in group B. Mean ± SE PCT was 1.78±0.39ng/ml in group A and 0.5±0.09ng/ml (p=0.001) in group B and mean± SE CPIC was 5.7±0.18 in group A and 2±0.53 (p<0.001) in group B. The in-hospital mortality was 17.9% in group A. PCT and CRP were accurate in predicting mortality with AUC of 0.8 (95%CI 0.61-0.98) and 0.67 (95%CI 0.41-0.92) respectively. SMART-COP, SOAR and PSI performed similarly with AUC 0.38 (95%CI 0.17-0.6), 0.52

Africa; ⁷General Practice with Specialist Interest in Respiratory Medicine, Sheringham Medical Practice, Norfolk, United Kingdom; ⁸General Practice with Specialist Interest in Respiratory Medicine, Woodbrook Medical Centre, Loughborough, United Kingdom; ⁹General Practice with Specialist Interest in Respiratory Medicine, Castlefields, Runcorn, United Kingdom; ¹⁰Peninsula Medical School, University of Plymouth, Plymouth, United Kingdom

Rationale: Early diagnosis and intervention in the management of symptomatic chronic obstructive pulmonary disease (COPD) may reduce the associated impact on patients and economic burden on health systems.

Objective: Characterise healthcare utilisation in the yrs preceding a definitive COPD diagnosis to identify "red flags" that may aid in earlier diagnosis.

Method: Retrospective observational study using pooled routine practice data from the General Practice and Optimum Patient Care Research Databases. Patients were: ≥40 years, received a COPD diagnosis between 1990–2009; were prescribed ≥2 COPD therapies in the yr following diagnosis, and had ≥2yrs of continuous practice data prior to their diagnosis. Non-routine healthcare resource utilisation was monitored in the yrs preceding COPD diagnosis.

Results: 38,859 eligible patients: 52.6% male, diagnosis with COPD at median (IQR) age of 68 (60–75) years. In the 2yrs prior to diagnosis, 56.4% consulted on multiple (≥2) occasions for lower respiratory (LR) complaints, 26.5% for lower respiratory tract infections. Of these, 34.5% received multiple prescriptions for oral steroids (71.4%) and/or antibiotics (82.5%). These patients also recorded more respiratory outpatient visits over the 10yrs, and inpatient hospitalisations over the 4yrs, prior to diagnosis. Significantly more patients diagnosed in secondary care (or within 2-weeks of a hospital admission) had received multiple LR prescriptions in the prior 2yrs than patients diagnosed in primary care (40.7%vs34.5% p=0.007).

Conclusion: The data suggest increased use of non-routine respiratory resource by patients in the 2- to 10-yrs prior to their COPD diagnosis suggesting opportunities for earlier COPD diagnosis and/or assessment may be missed in the UK.

183

Derivation of a predicted equation for peak expiratory flow (PEF) values in adult Indian population using EU scale peak flow meter (PFM)

Rahul Kodgule¹, Virendra Singh², Bodigovinda Saicharan³, Raja Dhar⁴, Jyoti Londhe¹, Bill Brashier¹, Udaiveer Singh², Umar Hafiz², Subhasis Mukherjee⁴, Sapna Madas¹, Sundeeep Salvi¹, Parvaiz Koul⁵. ¹Clinical Research, Chest Research Foundation, Pune, Maharashtra, India; ²Clinical Research, Asthma Bhavan, Jaipur, Rajasthan, India; ³Clinical Research, Lung Care Center, Hyderabad, Andhra Pradesh, India; ⁴Research and Education, National Asthma, Allergy & Bronchitis Institute (NAABI), Kolkata, West Bengal, India; ⁵Internal and Pulmonary Medicine, SheriKashmir Institute of Medical Sciences, Srinagar, Jammu and Kashmir, India

Although a PFM is a useful tool for diagnosis and management of asthma, there are no reliable reference values for the adult Indian population. The aim of this study was to derive a predicted equation for PEF for Indian adults using an EU scale PFM.

Methodology: 5 centres representing different geographic, ethnic and socio-economic backgrounds from India were selected (North: Srinagar, West: Jaipur, East: Kolkata, Centre: Pune and South: Hyderabad). Respiratory health and demographic questionnaires were administered to randomly selected 1000 rural and 1000 urban adults from each centre. Sampling was stratified according to gender, height and age. PEF values were measured using Breathometer (Cipla Ltd., India). The predicted equation was generated using linear regression analysis with SPSS software, Version 11.5.

Results and conclusion: Out of 9746 participants, 3608 were excluded as unhealthy based on presence of respiratory symptoms, smoking status and/or previous respiratory disease. 80% of the 6138 healthy adults (M: 3720; F: 2418) were used to derive the predicted equation. The equation was validated by comparing the predicted PEF values with the measured values in the remaining 20% sample (Mean ΔPEF: M=3.7 L/min, CI= -0.9,8.3; F=3.1, CI= -1.4,7.6). Gender, age and height were found to be significant determinants of PEF. Using regression analysis, the predicted equations derived in L/min are: F: PEF = 168.551 - 1.776*age + 1.354*height; M: PEF = 69.259 - 2.290*age+ 2.888*height. These reference PEF values for Indian adults are 24% lower for males and 27% lower for females than the Caucasian population.

184

Early detection of COPD in primary care – The Copenhagen COPD screening project

Anne Marie Lyngso¹, Vibeke Gottlieb², Vibeke Backer², Anne Frølich¹. ¹Department of Integrated Healthcare, Bispebjerg University Hospital, Copenhagen, Denmark; ²Department of Pulmonary Medicine, Bispebjerg University Hospital, Copenhagen, Denmark

Background: Chronic Obstructive Pulmonary Disease (COPD) is among the leading causes of death in the world. Delay in diagnosing COPD appears common even though current consensus guidelines emphasize the importance of early detection. **Aim:** To evaluate the effectiveness of a 2-stage-screening programme in primary care.

Methods: Subjects aged 65+ registered with a general practitioner (GP) in eastern Copenhagen received a simple questionnaire asking for smoking status and symp-

toms of COPD and an invitation to undergo spirometry at their GP or at a local health care centre if they were smokers, former smokers or if any of the following signs were present: morning cough with sputum and/or dyspnoea.

Results: A total of 7103 subjects participated in the study. Of these 5767 subjects returned the questionnaire (81.2%), with 58.5% of the subjects being at risk of COPD. Of the 45 general practices in the study area, 10 did not perform spirometry. Subjects listed with one of these practices were told to contact a local health care centre for spirometry. The participation rate among subjects at risk of COPD was 35% in general practice and 60% at the local health care centre. In total 1352 subjects had spirometry performed. Of these 44% were diagnosed with COPD according to the GOLD classification. COPD was classified as mild in 252 (42.3%), moderate in 258 (43.3%) and severe to very severe in 86 subjects (14.4%).

Conclusion: The study shows that a short, mailed questionnaire based on patient-reported information can serve as a first-level screening tool for the identification of subjects at risk of COPD. However, the organisation of spirometry seems important for the participation rate.

185

Usefulness of the Wells score for pulmonary embolism diagnosis in primary care. Retrospective study of 95 cases

Segolene Feutrie¹, Charles Dayen¹, Houcine Bentayeb¹, Emmanuelle Lecuyer¹, Marie Boutemy¹, Vincent Jounieaux², Youcef Douadi¹. ¹Pneumologie, CH, Saint Quentin, France, Metropolitan; ²Pneumologie, CHU, Amiens, France, Metropolitan

Pulmonary embolism (PE) is an insidious life-threatening condition and its diagnosis represents a challenging topic in daily clinical practice since early recognition with appropriate management is known to improve prognosis. Clinical scores like Wells score are not used in daily practice by general practitioner (GP) and PE is most often diagnosed in hospital emergency room.

We conducted a monocentric retrospective study which main objective was to evaluate the failure-rate and the efficiency of the strategy used by GP for PE diagnosis. All patients hospitalized for acute PE in a non-teaching hospital of the north of France were considered.

Ninety five patients were included. Retrospective evaluation of the Wells score gave a low PE probability in 34.7% and a strong or intermediate probability in 65.3% of the population whereas PE diagnosis was assessed by GP in 12% and 38%, respectively. We concluded that using the Wells score in general practice may improve the rate of PE diagnosis. To facilitate the implementation of such score, we developed an algorithm based on presence of dyspnea, thoracic pain or tachycardia that led to a 88% PE diagnosis by GP.

186

Effectiveness of continuity in "World Day of COPD" awareness campaign on case finding for COPD in target population

Florin Mihaltan¹, Roxana Nemes¹, Amelia Ionescu². ¹Respiratory Care, National Institute of Pneumology "M. Nasta", Bucharest, Romania; ²Medical Affairs, Novartis Pharma Services Romania, Bucharest, Romania

Background and aim: To evaluate effectiveness of continuity in awareness disease campaign on case-finding for COPD in a target population: over 35, smokers/ex-smokers, at least one respiratory symptom.

Methods: 1-week marketing campaign was conducted 2009-2010 in WCD, using different marketing tools. Target population had open access to spirometry. Population was encouraged to visit COPD web-site to inform and take on-line COPD risk-test. In 2009-high visibility posters, leaflets within medical offices, press conference on World COPD Day. In 2010-media campaign, press conference precede COPD Week, leaflets as personal letters from President of Romanian Society of Pneumology, distributed directly to population, through telephony companies. Primary outcome was number of COPD diagnosed. Secondary outcomes measures: unique site visitors, number of persons who perform on-line COPD risk test.

Results: In 2009, 3494 persons were tested, 847 diagnosed (24%). In 2010, 4298 persons were tested, 1259 diagnosed (29%) – see Table 1.

Table 1. Outcomes testing for COPD campaign 2010 versus 2009

Outcomes	2009	2010	Growth 2010/2009 (%)
Tested	3249	4298	32.29
Newly COPD diagnosed	747	1259	68.54
Diagnosis rate (%)	23	29	26.08

Web-site access: 804 in 2009, with 245 on-line test (30%); 5006 in 2010, with 2367 on-line test (46%) – see Table 2.

Table 2. Outcomes learning about COPD campaign 2010 versus 2009

Outcomes	2009	2010	Growth 2010/2009 (%)
Web-sites unique visitors	804	5006	522.64
On-line COPD risk test	245	2367	866.12

Conclusion: Continuity in awareness disease campaign on COPD case-finding

SUNDAY, SEPTEMBER 25TH 2011

increased presentation and interest about COPD. Awareness campaign in media, more personalized messages, directly addressed to potential patients, increased effectiveness of social marketing models.