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Abstracts' Service

Community Pharmacy-Based Asthma Services—What Do Patients Prefer?

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Background. Patient preferences can influence the outcomes of treatment and so understanding and organizing health-care services around these preferences is vital.

Objective. To explore patient preferences for types of community pharmacy-based asthma services, to investigate the influence of "experience" in the molding preferences for such services, and to identify aspects of the services that patients prefer over others.

Methods. Semistructured face-to-face interviews were conducted with a convenience sample of two types of asthma patients: (1) those *naïve* to a specialized asthma service and (2) those who had *experienced* a specialized asthma service. Interviews were audio-recorded, transcribed verbatim, and thematically analyzed.

Results. Eighteen interviews were conducted (8 *experienced* patients, 10 *naïve* patients. The majority of the patients wanted the pharmacist to play a greater role in their asthma management. Patients experiencing increased levels of service had increased levels of expectations as well as more specific preferences for various aspects of the service. The key aspects of an asthma service that all patients wanted their pharmacists to provide were the provision of information about asthma and its medications, lung function testing and monitoring of their asthma, and checking/correcting their inhaler technique. Patients also expressed a desire for skilled communication and behavioral aspects from the pharmacist such as friendliness, empathy, attentiveness, and dedicated time. Patients highlighted the importance of privacy in the pharmacy. There was a high level of satisfaction toward the currently delivered asthma service among both *naïve* and *experienced* patient. The provision of the specialized service was associated with increased patient loyalty to the particular pharmacy. All patients indicated a willingness to participate in future pharmacy-delivered specialized asthma services.

Discussion. Elements of the specialized pharmacy-based asthma services important from a patient's perspective were identified. It would be important to identify the strength and magnitude of patient's preferences for different elements of such services. Future pharmacy-based services should incorporate patient preferences and tailor services to patient's needs to ensure their long-term viability.

Difference Between Patient-reported Side Effects of Ciclesonide versus Fluticasone Propionate

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Respiratory Medicine 2010;104:1825-1833

Rationale. Patient-reported outcomes provide new insights into the dynamics of asthma management. Further to asthma control and quality of life, self-reported side effects of treatment can be assessed with the validated Inhaled Corticosteroid Questionnaire (ICQ).

Objectives. To compare patient-reported side effects between the inhaled corticosteroids ciclesonide and fluticasone propionate.

Methods. Patients with moderate or moderate-to-severe asthma, pre-treated with a constant dose and type of medication, were randomized in three separate studies: 1) once daily ciclesonide 320 μg (n = 234) or twice daily fluticasone propionate 200 μg (n = 240); 2) twice daily ciclesonide 320 μg (n = 255) or twice daily fluticasone propionate 375 μg (n = 273); and 3) twice daily ciclesonide 320 μg (n = 259) or twice daily fluticasone propionate 500 μg (n = 244). Patients rated the side effect questions of the 15 domain ICQ on a 7-point Likert scale (0 = not at all, 6 = a very great deal) during scheduled visits.

Results. The majority of side effect scores remained similar with ciclesonide but worsened statistically significantly with fluticasone propionate from

baseline to the end of the study in within-treatment analyses. In between-treatment analyses of studies 1 and 3 ciclesonide significantly improved total side effect scores ($p < 0.025$) and 14 out of 30 individual local and systemic domain scores ($p < 0.025$) compared with fluticasone propionate. In Study 2, although ciclesonide improved the majority of scores compared with fluticasone propionate only 'oropharyngeal itching' reached statistical significance ($p < 0.025$, one-sided).

Conclusion. Patient-perceived side effects differ depending on the type of inhaled corticosteroids used. Patients with moderate-to-severe asthma report less intense side effects assessed with ICQ with ciclesonide than with fluticasone propionate.

Clinical trial registration. The reported trials were completed before July 1 2005 and, therefore, are not registered.

Patients' Prediction of Extubation Success

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Intensive Care Medicine 2010;36:2045-2052

Purpose. The spontaneous breathing trial (SBT)—relying on objective criteria assessed by the clinician— is the major diagnostic tool to determine if patients can be successfully extubated. However, little is known regarding the patient's subjective perception of autonomous breathing.

Methods. We performed a prospective observational study in 211 mechanically ventilated adult patients successfully completing a SBT. Patients were randomly assigned to be interviewed during this trial regarding their prediction of extubation success. We compared post-extubation outcomes in three patient groups: patients confident (*confidents*; $n = 115$) or not (*non-confidents*; $n = 38$) of their extubation success and patients not subjected to interview (control group; $n = 58$).

Results. Extubation success was more frequent in *confidents* than in *non-confidents* (90 vs. 45%; $p < 0.001$/positive likelihood ratio = 2.00) or in the control group (90 vs. 78%; $p = 0.04$). On the contrary, extubation failure was more common in *non-confidents* than in *confidents* (55 vs. 10%; $p < 0.001$/negative likelihood ratio = 0.19). Logistic regression analysis showed that extubation success was associated with patient's prediction [OR (95% CI): 9.2 (3.74-22.42) for *confidents* vs. *non-confidents*] as well as to age [0.72 (0.66-0.78) for age 75 vs. 65 and 1.31 (1.28-1.51) for age 55 vs. 65].

Conclusions. Our data suggest that at the end of a sustained SBT, extubation success might be correlated to the patients' subjective perception of autonomous breathing. The results of this study should be confirmed by a large multicenter trial.

BCG Vaccination Status may Predict Sputum Conversion in Patients with Pulmonary Tuberculosis: A New Consideration for an Old Vaccine?

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Thorax 2010;65:1072-1076

Background. Failure to convert (persistent sputum and/or culture positivity) while on antituberculosis (anti-TB) treatment at the end of the second month of anti-TB therapy has been reported to be a predictor of treatment failure. Factors that could be associated with persistent bacillary positivity at the end of the second month after initiation of anti-TB treatment were assessed.

Methods. A prospective cohort study was conducted in 754 patients with sputum culture positive pulmonary TB in Mwanza, Tanzania. Information on social demographic characteristics, anthropometric measurements, BCG scar status, HIV status, CD4+ count, white blood cell count, haemoglobin and sputum culture status was obtained.

Results. Factors associated with sputum culture non-conversion at the end of the second month of anti-TB treatment were initial acid-fast bacilli (AFB) culture grading of 3+ (OR 5.70, 95% CI 1.34 to 24.31, p=0.02)

and absence of a BCG scar (OR 3.35, 95%CI 1.48 to 7.58, p=0.004).

Conclusions. Patients with pulmonary TB with no BCG scar and high initial AFB sputum intensity are at risk of remaining sputum culture positive at the end of the second month of anti-TB treatment. These findings reflect a beneficial role for BCG vaccination on sputum conversion which should also be examined in large studies in other areas. The finding of a beneficial role for BCG vaccination on the treatment of pulmonary TB is important for TB control and vaccination programmes.

Exercise Decreases Plasma Antioxidant Capacity and Increases Urinary Isoprostanes of IPF Patients

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Respiratory Medicine 2010;104:1919-1928

We tested whether markers of systemic oxidant stress were detectable in 29 typical IPF patients, and whether these increased after low level exercise. We obtained resting plasma for measurement of amino terminal pro brain natriuretic peptide (NT-proBNP), and plasma and urine samples for isoprostanes and total nitrite. Total antioxidant capacity (TAC) was measured in plasma, and H_2O_2 was measured in urine. Subjects exercised at 50 W on a semi recumbent bicycle until limited by dyspnea. Samples were obtained immediately after exercise for measurement of the same variables.

Plasma and urine samples were also obtained at rest from 6 normal individuals over 40 years of age solely to establish comparison values for NT-proBNP, nitrite, H_2O_2 and TAC assays.

Plasma NT-proBNP was high at rest and after exercise, suggesting pulmonary arterial hypertension. IPF patients' resting NT-proBNP concentrations apparently exceeded those of normal controls. IPF plasma isoprostanes at rest exceeded the normals. IPF urine isoprostanes increased significantly after exercise ($P = 0.047$ by signed rank test); and, plasma TAC decreased significantly after exercise ($P < 0.001$ by signed rank test). Neither plasma nor urine nitrite changed significantly after exercise. H_2O_2 concentration was quite high after exercise in some IPF subjects' urine.

IPF patients demonstrate systemic oxidant stress at rest detectable as increased isoprostanes in the circulation. An increase in urine isoprostanes and a decrease in plasma TAC after exercise suggest that reactive oxygen species (ROS) are produced during low level exercise done by IPF patients.

Exhaled Nitric Oxide Thresholds Associated with a Sputum Eosinophil Count ≥3% in a Cohort of Unselected Patients with Asthma

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Thorax 2010;65:1039-1044

Background. It has been claimed that exhaled nitric oxide (FeNO) could be regarded as a surrogate marker for sputum eosinophil count in patients with asthma. However, the FeNO threshold value that identifies a sputum eosinophil count ≥3% in an unselected population of patients with asthma has been poorly studied.

Methods. This retrospective study was conducted in 295 patients with asthma aged 15–84 years recruited from the asthma clinic of University Hospital of Liege. Receiver-operating characteristic (ROC) curve and logistic regression analysis were used to assess the relationship between sputum eosinophil count and FeNO, taking into account covariates such as inhaled corticosteroids (ICS), smoking, atopy, age and sex.

Results. Derived from the ROC curve, FeNO ≥41 ppb gave 65% sensitivity and 79% specificity (AUC=0.777, p=0.000l) for identifying a sputum eosinophil count ≥3%. Using logistic regression analysis, a threshold of 42 ppb was found to discriminate between eosinophilic and non-eosinophilic asthma (p<0.0001). Patients receiving high doses of ICS

(≥1000 μg beclometasone) had a significantly lower FeNO threshold (27 ppb) than the rest of the group (48 ppb, p<0.05). Atopy also significantly altered the threshold (49 ppb for atopic vs 30 ppb for non-atopic patients, p<0.05) and there was a trend for a lower threshold in smokers (27 ppb) compared with non-smokers (46 ppb, p=0.066). Age and sex did not affect the relationship between FeNO and sputum eosinophilia. When combining all variables into the logistic model, FeNO (p<0.0001), high-dose ICS (p<0.05) and smoking (p<0.05) were independent predictors of sputum eosinophilia, while there was a trend for atopy (p=0.086).

Conclusion. FeNO is able to identify a sputum eosinophil count ≥3% with reasonable accuracy and thresholds which vary according to dose of ICS, smoking and atopy.

Categorization and Impact of Pulmonary Hypertension in Patients with Advanced COPD

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Respiratory Medicine 2010;104:1877-1822

Introduction. The functional significance of pulmonary hypertension (PH) in COPD is unclear. The purpose of the study was to define the prevalence, severity and associated functional impact of PH in patients with severe COPD listed for lung transplant.

Methods. A retrospective review of the Organ Procurement and Tissue Network (OPTN) database between 1997 and 2006 for patients with the primary diagnosis of COPD. Baseline demographics, hemodynamics, pulmonary function tests, six minute walk distance test (6MWD) and pre-transplant survival data was analyzed.

Results. 4930 patients with COPD had evaluable right heart catheterization data (RHC). PH was present in 30.4%, with pulmonary venous hypertension (PVH) accounting for an additional 17.2% of patients. Patients with pulmonary hypertension walked an average of 28 m less than those with normal hemodynamics. Normal hemodynamics group: 261 ± 104m, PH; 238 ± 106m (p<0.01), PVH: 228 ± 104m (p < 0.05). In a multivariable analysis, the mean pulmonary artery pressure (β = -1.33; p = 0.01) was an independent predictor of a reduced 6MWD, as were forced vital capacity (β = 1.48; p < 0.001) and patient age (β = -1.91; p < 0.001). Both PH (HR 1.23 95%CI [1.01-1.50]) and PVH (HR 1.35 95%CI [1.11-1.65]) were shown to be independent risk factors for mortality on the waiting list, even after adjustment for age sex, race, BMI, lung function, severity of illness and diabetes (PH: HR 1.27; 95% CI [1.04-1.55), PVH: HR 1.40; 95% CI [1.13-1.73]).

Conclusion. PH is common in advanced COPD and is associated with functional impairment and an increased mortality risk. Stratification by RHC determined pulmonary hemodynamics appears important in distinguishing distinct clinical phenotypes.

Genetic Influences on Chronic Obstructive Pulmonary Disease—A Twin Study

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Respiratory Medicine 2010;104;1890-1895

Background. Genes that contribute to the risk of developing Chronic Obstructive Pulmonary Disease (COPD) have been identified, but an attempt to accurately quantify the total genetic contribution to COPD has to our knowledge never been conducted.
Methods. Hospital discharge diagnoses data on COPD were analysed in 22,422 Danish twin pairs, 20-71 years of age. The analyses were replicated in a population of 27,668 Swedish twin pairs, 45-108 years of age. A Cox-regression model was applied to the discordant time from the age at first hospital admission for COPD in the co-twin of an affected twin. Latent factor models were used to estimate genetic and environmental effects.

Results. The probandwise concordance rate for COPD was higher in monozygotic (MZ) than in dizygotic (DZ) twins, 0.19 vs. 0.07 (p = 0.08) in the Danish population, and 0.20 vs. 0.08 (p = 0.006) in the Swedish population. After adjusting for sex, smoking and age at first hospital admission the risk of developing COPD in the co-twin of an affected twin was higher in MZ than in DZ twins, with hazards ratio 4.3 (95% confidence interval 1.2-15.8, p = 0.03) in Danish twins and 3.4 (1.5-7.7, p = 0.004) in Swedish twins. According to the most parsimonious model, additive genetic factors explained 63% (46-77%) of the individual COPD-susceptibility in the Danish population and 61% (48-72%) in the Swedish population.

Conclusion. The susceptibility to develop severe COPD, as defined by hospitalizations, is strongly influenced by genetic factors. Approximately 60% of the individual susceptibility can be explained by genetic factors.

Integrating Tobacco Cessation into Mental Health Care for Posttraumatic Stress Disorder: A Randomized Controlled Trial

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JAMA 2010;304:2485-2493

Context. Most smokers with mental illness do not receive tobacco cessation treatment.

Objective. To determine whether integrating smoking cessation treatment into mental health care for veterans with posttraumatic stress disorder (PTSD) improves long-tem smoking abstinence rates.

Design, Setting and Patients. A randomized controlled trial of 943 smokers with military-related PTSD who were recruited from outpatient PTSD clinics at 10 Veterans Affairs medical centers and followed up for 18 to 48 months between November 2004 and July 2009.

Intervention. Smoking cessation treatment integrated within mental health care for PTSD delivered by mental health clinicians (integrated care [IC]) vs referral to Veterans affairs smoking cessation clinics (SCC). Patients received smoking cessation treatment with 3 months of study enrollment.

Main Outcome Measures. Smoking outcomes included 12-month bioverified prolonged abstinence (primary outcome) and 7- and 30-day point prevalence abstinence assessed at 3-month intervals. Amount of smoking cessation medications and counseling sessions delivered were tested as mediators of outcome. Posttraumatic stress disorder and depression were repeatedly assessed using the PTSD Checklist and Patient Health Questionnaire 9, respectively, to determine if IC participation or quitting smoking worsened psychiatric status.

Results. Integrated care was better than SCC on prolonged abstinence (8.9% vs 4.5%; adjusted odds ratio, 2.26; 95% confidence interval [CI], 1.30-3.91; P = .004). Differences between IC vs SCC were largest at 6 months for 7-day point prevalence abstinence (78/472 [16.5%] vs 34/471 [7.2%], P < .001) and remained significant at 18 months (86/472 [18.2%] vs 51/471 [10.8%], P <.001). Number of counseling sessions received and days of cessation medication used explained 39.1% of the treatment effect. Between baseline and 18 months, psychiatric status did not differ between treatment conditions. Posttraumatic stress disorder symptoms for quitters and nonquitters improved. Nonquitters worsened slightly on the Patient Health Questionnaire 9 relative to quitters (differences ranged between 0.4 and 2.1, P = .03), whose scores did not change over time.

Conclusion. Among smoker with military-related PTSD, integrating smoking cessation treatment into mental health care compared with referral to specialized cessation treatment resulted in greater prolonged abstinence.

Trial Registration. clinicaltrials.gov Identifier: NCT00118534

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