A pragmatic trial of e-cigarettes, incentives, and drugs for smoking cessation

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Smoking is the leading cause of preventable illness and death. Companies in the US offer employees smoking cessation programmes to alleviate the cost associated with smoking. Understanding the most effective intervention for smoking cessation can guide companies on how to support smoking cessation with their employees.

This pragmatic trial of smoking cessation aimed to explore the effectiveness of five smoking cessation interventions. These interventions included usual, free cessation aids (including nicotine replacement therapy or pharmacotherapy, or access to free e-cigarettes if these therapies failed), free e-cigarettes, free cessation aids plus a $600 reward or free cessation aids plus $600 in redeemable funds, provided as a deposit with money removed if cessation milestones were not met.

Results showed that the $600 incentive group demonstrated the highest sustained abstinence rate at six months (2.9%), with the reward group coming a close second (2.0%). Usual care, free cessation aids and free e-cigarettes produced sustained abstinence rates of 0.1%, 0.5% and 1.0%, respectively.

Researchers concluded that financial incentives, when used in combination with free cessation aids, were the most effective smoking cessation intervention. Although these results are compelling, it is important to remember that interventions used in each group were not distinct from each other. Therefore, it may be hard to draw clear conclusions about the most effective method of smoking cessation based on these results.

Tobacco smoke exposure in early life and adolescence in relation to lung function

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As is well-known, maternal smoking during pregnancy is associated with undesirable health outcomes in the offspring. Less is known, however, about the long-term effects this may have on lung function, as well as related effects of second-hand smoke (SHS) exposure and adolescent smoking.

Dr Thacher and colleagues explored data collected in the BAMSE (Barn/Child, Allery, Milieu, Stockholm, Epidemiology) study to understand the effects of maternal smoking during pregnancy, SHS exposure during infancy or at 16 years, and adolescent smoking on lung function at 16 years.

Results showed that maternal smoking during pregnancy and adolescent smoking were associated with lower forced expiratory volume in 1 second (FEV1)/forced vital capacity (FVC) ratios and increased peripheral airway resistances at 16 years. Such associations were not found in either SHS cohort. Although no significant interaction was observed between maternal smoking during pregnancy and adolescent smoking, those who were exposed to both demonstrated a more greatly reduced FEV1/FVC ratio of -2.5%.

Conclusions highlighted that exposure to maternal smoking during pregnancy had significant associations with reduced lung function at 16 years. This suggests that perinatal exposure to tobacco smoke has a long-term effect on lung function that can persist until adolescence. In addition, the presence of reduced lung function in adolescent smokers highlights the short duration required for significant effects to appear.

Trends in asthma self-management skills and inhaled corticosteroid use during pregnancy and postpartum from 2004 to 2017

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Effective disease management is important in the care of pregnant, asthmatic patients to reduce the number of asthma exacerbations and use of oral corticosteroids.

The researchers compared the self-management skills and inhaled corticosteroid (ICS) non-adherence rates in three cohorts of asthmatic pregnant women between 2004 and 2017. They also explored the number of educational sessions required to achieve maximum improvement in these skills.


Results demonstrated that self-management skills in these participants did not improve between 2004 and 2017, with 41%, 29% and 38% of the 2004, 2007 and 2013 cohorts using ICS therapy, respectively. Medication knowledge increased significantly after two sessions for controller medication and three sessions for reliever medication, and correct inhaler technique was achieved and ICS adherence was improved after just one session.

Researchers concluded that high prevalence of non-adherence and poor self-management existed in all cohorts; however, such factors can be improved after education.

High prevalence of bronchiectasis in emphysema-predominant COPD patients

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The 2017 update of the Global Initiative for Chronic Obstructive Lung Disease (GOLD) has emphasised the impact that bronchiectasis has on the course and prognosis of chronic obstructive pulmonary disease (COPD). Studies on co-existing COPD and bronchiectasis have focused on the influence of co-existing diseases on acute exacerbation frequency, severity of airflow limitation, prognosis and the characteristics of pathogenic microorganisms. However, little is known about the relationship between bronchiectasis and different phenotypes of COPD subjects. Should bronchiectasis, like emphysema and chronic bronchitis, be considered a phenotype of COPD?

In this retrospective study of 1739 COPD patients, the prevalence of bronchiectasis in different phenotypes of COPD subjects and the correlation between bronchiectasis and different phenotypes, especially emphysema, were investigated.

The COPD patients were divided into two groups: those with bronchiectasis (n=1440) and those without (n=1599). Those with both COPD and bronchiectasis had worse states of nutrition, more severe airway obstruction and more extensive emphysema than those patients without bronchiectasis.
Comparing emphysema-predominant and non-emphysema-predominant groups, the former had a higher proportion of bronchiectasis, higher emphysema index (EI) and more severe airway limitations.

This study represented the first time that EI was used to explore the correlation between bronchiectasis and different phenotypes in COPD patients. The study’s comparison of COPD patients with and without bronchiectasis implies that exploring the mechanisms of co-existing COPD and bronchiectasis may help clinicians to better understand the pathology and pathophysiology of COPD.

Can CAPTURE be used to identify undiagnosed patients with mild-to-moderate COPD likely to benefit from treatment?


COPD Assessment in Primary Care to Identify Undiagnosed Respiratory Disease and Exacerbation Risk (CAPTURE™) was developed to identify people with severe, high-risk, undiagnosed COPD in primary care settings, i.e. people with a FEV1 <60% predicted or exacerbation risk.

Although screening of asymptomatic individuals for undiagnosed COPD is not recommended, it is conceivable that identifying symptomatic patients with mild-to-moderate airflow limitation could be advantageous.

The authors of this US study set out to learn if CAPTURE could identify patients with FEV1 60–80%. To do this, analyses were performed on data from the original CAPTURE control group (n=160), with cases defined by a diagnosis of COPD, FEV1 ≥60% predicted and no exacerbation in the prior 12 months (n=73) and those with no COPD serving as control (n=87). The entire dataset (n=346) was used to evaluate CAPTURE across the full range of COPD (n=259), with patients without COPD (n=87) serving as control.

Results of the analyses suggest that CAPTURE can be used to identify symptomatic patients likely to have airflow limitation and in need of further clinical evaluation for possible COPD.

Further testing in a large prospective study of this case-finding approach and its effects on diagnosis, treatment and patient-centred outcomes are warranted.

Clinical characteristics of patients newly diagnosed with COPD by the fixed ratio and lower limit of normal criteria: a cross-sectional analysis of the TargetCOPD trial


Although COPD is the third leading cause of premature mortality, its definition remains in a state of controversy due to the criteria for defining airflow obstruction. GOLD and the National Institute for Health and Care Excellence (NICE) apply the fixed ratio (FR) of FEV1 to FVC of <70% as indicative of airflow obstruction, but this definition takes into account neither age, ethnicity nor gender.

The aim of this study was to compare the clinical characteristics of symptomatic patients in primary care with case-found COPD diagnosed when using the FR criterion with those identified when using the lower limit of normal (LLN; below the fifth percentile adjusted for age, gender, height and ethnic group).

The study consisted of a post-hoc cross-sectional analysis of data from TargetCOPD, which was a cluster-randomised controlled trial based in primary care that compared two approaches to COPD case finding against usual care. Those of the 32,811 case-finding arm of the TargetCOPD trial who responded to a questionnaire and attended a spirometry assessment (n=2607) were analysed for demographic characteristics, smoking status, symptoms, self-reported co-morbidities and quality of life.

The conclusion of the study was that the use of FR for defining airflow obstruction may lead to the inclusion of a significant number of older people with breathlessness as having COPD, who may instead have age-related changes in lung function in the presence of cardiovascular disease as the cause for their symptoms.

Understanding patients’ perceptions of asthma control: a qualitative study.


Optimal asthma control consists of preventing symptoms, minimising attacks, enabling ordinary levels of physical activity, and achieving near-normal lung function, while also minimising adverse effects from medication. However, patients’ perceptions of well-controlled asthma often differ considerably from healthcare professionals’, with few patients considering their asthma ‘uncontrolled’ even while experiencing significant morbidity.

In this study, quantitative interviews were conducted with 42 patients recruited from a primary care asthma clinic and a hospital asthma outpatient clinic. Participants fell into two groups regarding their views on preventer medication. The smaller group acknowledged the importance of taking medication in the absence of symptoms. However, the majority of patients used this medication to treat symptoms only when they exceeded their personally defined tolerance threshold. Some patients also believed that preventer medication should only be used to prevent an exacerbation occurring when they started experiencing worsening of symptoms.

Concerns about adverse effects of medication – potential or actual – were common. This was particularly true of corticosteroids, which were perceived as much more dangerous than short-acting bronchodilators. Patients were also concerned that taking medication frequently or for prolonged periods meant it would be less effective in an attack.

Finally, asthma reviews were considered a ‘waste of time’ and a bureaucratic step necessary only to obtain another prescription. However, contradictorily, patients felt that healthcare professionals focused too heavily on pharmacological prescription. However, contradictorily, patients felt that healthcare professionals focused too heavily on pharmacological prescription.