Asthma News:
Asthma impacts workplace productivity and daily activities

Asthma News:
Precision medicine for airways disease, identifying ‘treatable traits’

IPCRG Prize-Winning Abstract:
Systematic overview of supported self-management for asthma; a healthcare service perspective

Publication Highlight:
The facts and fantasies of inhaler technique
Asthma News: Asthma impacts workplace productivity and daily activities

A recent multinational study, presented by Dr Kevin Gruffydd-Jones during the IPCRG 2016 conference, found uncontrolled asthma had a large, negative impact on work productivity and daily activity of adults with asthma.

Key point: The large, negative impact of uncontrolled asthma on work productivity and daily activity highlights the continued need to optimise asthma management.

- ≥40% of adult patients have uncontrolled asthma, despite receiving treatment according to current recommendations.
- Research has shown that uncontrolled asthma has an impact on the patient’s work productivity.
- A questionnaire was administered to working, symptomatic adults with asthma receiving long-term maintenance therapy, from 6 countries.*
- 1598 adults with asthma fulfilled the selection criteria and completed the questionnaire.

The ‘Work Productivity and Activity Impairment Specific Health Problem’ Questionnaire is an internationally recognised and validated, 6-question questionnaire, which is patient-administered and quantitatively measures:

- Absenteeism (absence from work)
- Presenteeism (working while sick leading to reduced on-the-job effectiveness)
- Daily activity impairment attributable to a specific health problem, during the previous 7 days

- Mean scores: absenteeism 9.1%; presenteeism 31.5%; overall work impairment 35.7% and non-working activity impairment 38.1%.
- Uncontrolled asthma had an overall negative impact on work productivity and ability to perform daily activities (see figure below).

- On average, adults with asthma missed 3 working hours per week due to their asthma symptoms.
- Despite using long-term medication, most workers were affected physically and mentally by their asthma.

Mean scores: absenteeism 9.1%; presenteeism 31.5%; overall work impairment 35.7% and non-working activity impairment 38.1%.

*Brazil, Canada, Germany, Japan, Spain, UK.

IPCRG = International Primary Care Research Group.

Asthma News: Precision medicine for airways disease, identifying ‘treatable traits’

What is precision medicine?

In 2015, US president Barack Obama popularised the idea of ‘precision medicine’, which is defined as “treatments targeted to the needs of individual patients on the basis of genetic, biomarker, phenotypic, or psychosocial characteristics that distinguish a given patient from other patients with similar clinical presentations.”

Precision medicine in airway disease – Why and how?

- The concept of precision medicine is not entirely novel; it has always been the physician’s task in practice to manage patients individually towards better outcomes. The novelty is that modern medicine allows a higher level of biological and clinical precision, and integration, since new measurements have become available and systems approaches have allowed a new level of integration of clinical and biological knowledge.
- Asthma and COPD are ‘complex’ and ‘heterogeneous’ airways diseases, with features that are not present in all patients, or in a given patient at all time points.
- The complexity and heterogeneity of these airway diseases lend themselves to a precision-medicine approach aimed at improving their assessment, treatment, management and outcomes.
- The authors propose a precision-medicine approach for the diagnosis and management of patients with airway disease, based on the concept of identifying “treatable traits” in each patient.
- The concept advises that clinicians should look at the patient’s history, clinical examination, risk factors, and clinical tests such as spirometry, FeNO, or blood eosinophils.
- If these point to a high probability of airway disease, clinicians can assess and manage the patient’s pulmonary, extra-pulmonary, and behavioural/lifestyle ‘treatable traits’. If the patient appears to have a low probability of airway disease, clinicians can assess and manage the patient’s extra pulmonary and behavioural/lifestyle ‘treatable traits’ and consider an alternative diagnosis.
- It is important to note that any precision or personalised-medicine approach needs to take into account patient perceptions and beliefs about their disease, and a strong collaboration between HCPs and patients is important.

<table>
<thead>
<tr>
<th>Pulmonary treatable traits</th>
<th>Extra-pulmonary treatable traits</th>
<th>Behavioural/lifestyle treatable traits</th>
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<tbody>
<tr>
<td><strong>Treatable traits</strong></td>
<td><strong>Proposed first-choice treatment options</strong></td>
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<td>Airflow limitation*</td>
<td>LABA/muscarinic antagonists; SABA/muscarinic antagonists; ICS; smoking cessation</td>
<td>Deconditioning</td>
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<tr>
<td>Eosinophilic airway inflammation</td>
<td>ICS</td>
<td>Obesity</td>
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<td>Chronic bronchitis</td>
<td>Smoking cessation</td>
<td>Cachexia</td>
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<td>Airway bacterial colonisation</td>
<td>Antibiotics</td>
<td>Obstructive sleep apnoea syndrome</td>
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<td>Bronchiectasis</td>
<td>Drainage</td>
<td>Cardiovascular disease</td>
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<td>Cough reflex hypersensitivity</td>
<td>Speech and language treatment</td>
<td>Gastro-oesophageal reflux disease</td>
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<td>Pre-capillary pulmonary hypertension</td>
<td>Long-term (dominillary) oxygen therapy</td>
<td>Upper airway diseases: rhinosinusitis</td>
</tr>
<tr>
<td>Chronic respiratory failure</td>
<td>Long-term (dominillary) oxygen therapy</td>
<td>Upper airway diseases: indurcible laryngeal obstruction (vocal cord dysfunction)</td>
</tr>
</tbody>
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Key point: The authors point to a need to incorporate new biological knowledge into clinical management to improve patient management and prognosis, particularly in mild-to-moderate patients. While conceptually valid, adoption of such precision-medicine approaches in primary care would require a clear practicable message and the necessary education, training and resources. The debate continues.
What is supported self-management?

- Supported self-management incorporates self-management education with the provision of a personalised asthma action plan and is supported by regular medical review.

- Crucial components include:
  - Discussion and agreement between a patient and their healthcare professional about living well with asthma.
  - Provision of a PAAP, which advises on using regular medication, recognising deterioration, and the appropriate action to take.
  - Preferred strategies for monitoring – using symptoms or peak flow levels and agreed thresholds for actions such as increasing ICS, commencing oral steroids, and when (and how) to seek professional help.

‘Core components’ to implementing supported self-management:

- Patient education
- Provision of a PAAP (supported by regular review)
- Tailoring content and mode of delivery to cultural, clinical, and demographic groups
- Implementation of supported self-management for asthma means healthcare organisations providing resources and information (e.g. template PAAPs), ensuring PCPs have the right training, and prioritising the provision of self-management support (flexible access to care and monitoring implementation).

- Identified benefits to implementing supported self-management:
  - Reduced hospital admissions
  - Reduced emergency department attendance
  - Reduced unscheduled consultations
  - Improved asthma control
  - Significant decreases in hospitalisation costs.

Key point: Supported self-management improves health outcomes. The cost of providing self-management support is offset by a reduction in unscheduled healthcare implementation; however, this needs a healthcare system that supports the concept of self-management and invests in skills training.

ICS = inhaled corticosteroid; PAAP = personalised asthma action plan; PCP = primary care physician; RCT = randomised controlled trial; PRISMS = Practical Systematic Review of Self-Management Support for long-term conditions; RECURSIVE = Reducing Care Utilisation through Self-management Interventions.

Publication Highlight: The facts and fantasies of inhaler technique

HCPs responsible for advising people with asthma on how to use inhaler devices will be aware of a variety of commonly held claims. A recent publication by ADMIT evaluated the current literature supporting ten of these most common claims and concluded there was a lack of evidence for many of them.

The following claims have A LACK of evidence supporting them:

- **pMDI devices should be shaken**: Failure to shake some inhaler devices may reduce drug delivery; however, to date, there have been no studies demonstrating any clinical consequences of shaking pMDIs. In the absence of further evidence, ADMIT advises shaking pMDIs in the interim.

- **Breath holding after inhalation is clinically beneficial**: Breath holding after inhalation from a pMDI may increase deposition of the drug in the airways. No studies have been identified to demonstrate improved bronchodilation or any long-term therapeutic consequences associated with breath holding after inhalation.

- **Rinsing of the mouth after using an inhaler is clinically beneficial**: Mouth rinsing can reduce residual drugs from being deposited in the oropharynx, but there is no clear evidence that this will improve oral health or that it has an effect on the bioavailability of the drugs.

- **The use of a single design of inhaler to deliver different inhaled drugs improves clinical outcomes**: There is evidence to show that sticking to the same design can reduce inhaler errors; however, there is a lack of evidence to link this to positive clinical effects.

- **Patients who use an inhaler device they prefer have better outcomes**: There is little evidence to support this and ADMIT advises that patient satisfaction should be assessed during patient reviews with HCPs, changing the device if appropriate.

- **Dysphonia is caused by particular inhaler devices and changing the device may relieve it**: Dysphonia can be a side effect of using ICS; however, this does not appear to be related to a particular type of inhaler device.

The following claims have MORE substantial evidence supporting them:

- **Spacer design and construction make a difference**: Spacer devices should not be considered as interchangeable. For example, metal spacers do not need priming and plastic spacers may become more efficient after priming.

- **Moisture impacts DPIs**: Patients should not blow into their DPIs and they should be stored in a dry place. Future studies should investigate whether ambient humidity has clinical consequences in patients using β₂-agonists and ICS from different DPIs.

- **Regular and proper use of inhaler devices improves asthma outcomes**: Incorrect inhaler technique and irregular usage of inhaler medication are both common causes of poor asthma control. ADMIT advises that both technique and use should be regularly reviewed by HCPs during patient consultations.

ADMIT = Aerosol Drug Management Improvement Team; DPI = dry powder inhaler; HCP = healthcare professional; ICS = inhaled corticosteroids; pMDI = pressurised metered-dose inhaler.