

Respiratory Medicine Symposium

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In an era of ever-enhancing technology, academic study and clinical practice, this symposium aimed to provide insight into some of the diverse facets of the specialty from internationally renowned specialists in the respiratory field, as well as radiology and palliative care, covering practical challenges such as air travel with pulmonary disease, updates in pioneering clinical work with pulmonary arterial hypertension, novel research into neutrophil-mediated inflammation and acute clinical problems in respiratory medicine.

SESSION 1 CHALLENGES IN THE CLINIC

The symposium was opened with a review of three separate sleep disorders by Dr Jacqueline Faccenda (Borders General Hospital, Melrose, Scotland); restless leg syndrome, narcolepsy and fatal familial insomnia. The under-recognised restless leg syndrome may be present in up to 15% of the general population. Although its pathophysiology is poorly understood, this condition may improve with a combination of dopaminergic agents, benzodiazepines, nerve stimulation and psychological strategies. Narcolepsy is characterised by excessive daytime sleepiness, sleep paralysis, hypnagogic hallucinations and cataplexy (sudden loss of motor tone). This disorder can be extremely disabling and management may require individually-tailored regimes with stimulants such as modafinil, tricyclic antidepressants and planned naps. Fatal familial insomnia is a rare prion disease, which presents in mid-life and progresses to stupor and death within 12–16 months. This disease has been identified in approximately 40 families worldwide, affecting around 100 people. Current management is supportive but recent identification of mutations in the PRNP (PRioN Protein) gene may lead to useful treatments in the future.

Respiratory illness is the third most common cause of emergencies related to air travel (10% of all causes). Such emergencies include novel pathology to an individual and acute exacerbations of chronic disease. Dr Robina Coker (Imperial College, London) presented a detailed review of the problems faced by the patient with respiratory disease when travelling on commercial flights, including the practical, organisational and financial challenges of oxygen-dependency, potentially hazardous effects of altitude-related hypoxaemia, microbial transmission and venous stasis. She also discussed the UK Flight Outcomes Study, with particular reference to healthcare requirements

following travel, including acute hospitalisation, antibiotic and corticosteroid usage as well as the under-appreciated deleterious effects of flight on patients with interstitial lung disease.¹ The forthcoming British Thoracic Society (BTS) recommendations on air travel and lung disease aim to update those from 2004, and are likely to include revisions such as a shortened, one-week timescale post-resolution of spontaneous pneumothorax before a commercial flight, as opposed to the previously widely accepted six-week interval.

Palliation of patients with advanced respiratory disease remains a challenge for clinicians. Professor Scott Murray (University of Edinburgh) presented two innovations currently being introduced in Scotland in an attempt to improve the care of such patients. The Supportive and Palliative Care Indicators Tool (SPICT) can assist in earlier identification of those who may benefit from a palliative approach. The Electronic Palliative Care Summary (ePCS) should be started in primary care for every patient placed on the palliative care register. These two measures could potentially improve communication between primary and secondary care, resulting in fewer emergency hospital admissions and inappropriate resuscitation attempts.

SESSION 2 THE STATE OF THE ART

Despite identification of population groups at higher risk of developing lung cancer and improved imaging modalities, the survival rates for lung cancer have not changed significantly over the last 30 years. It remains the most common fatal malignancy in the developed world and 15–20% occur in people who have never smoked. Professor Tariq Sethi (King's College, London) reviewed the current understanding of risk factors (including smoking, chronic obstructive pulmonary disease [COPD], idiopathic pulmonary fibrosis and silica pneumoconiosis) and genetic predisposition towards development of the disease, in terms of family history of lung cancer and epidermal growth factor receptor (EGFR) mutations. New therapies will target the genetic signatures of individual tumours, in particular tyrosine kinase/EGFR inhibitors and angiogenesis inhibitors.²

THE RW PHILIP LECTURE

Professor Marc Humbert (South Paris University, France), reviewed the current management of pulmonary arterial hypertension (PAH). The European prevalence of PAH is

likely to be underestimated at 15–52 cases per million adults. The condition remains problematic to diagnose and classically presents late. Three-year survival is approximately 67%, with a significant contribution from epoprostenol (this synthetic prostacyclin almost doubled the expected three-year survival in some studies). Recognition of the 4–6% of PAH patients with a familial trait has allowed identification of the presence of bone morphogenetic protein receptor type II gene mutations in the disease. It is hoped such work will lead to novel therapies for PAH in due course.³

SESSION 3 THE SCIENCE BEHIND RESPIRATORY DISEASE

Though common and widely studied, asthma remains a complex and challenging disease. Up to 70% of patients subjectively report suboptimal control despite following guideline management recommendations. Professor Neil Thomson (University of Glasgow) reviewed a range of current research strategies aimed at improving control of treatment-resistant asthma. Non-invasive biomarkers of airway inflammation such as exhaled nitric oxide and induced sputum may have roles in identifying asthma phenotype and guiding treatment. Biological agents aiming to block pro-inflammatory cytokines such as interleukin-5 are under development. Recent trials have demonstrated the novel technique of bronchial thermoplasty can improve control of severe asthma, which may become a management option in the near future.⁴

Professor Edwin Chilvers (University of Cambridge) presented new data from the study of neutrophilic behaviour within the lungs. The transit time of neutrophils across the pulmonary circulation is fundamental to the understanding of neutrophil-mediated lung disease. Previous work suggested that neutrophils transit the lung much more slowly than red cells, resulting in intrapulmonary physiological pooling. New studies of labelled neutrophils, using the techniques of rapid sequence radio-isotope imaging and a novel arterial outflow detection technique, are now suggesting that the granulocyte pool has been traditionally overestimated and that the transit time is much quicker than previously thought. This new evidence gives support to the idea that neutrophil priming (the process whereby neutrophil response to an activating stimulus is potentiated by prior exposure to a priming agent such as tumour necrosis factor- α) dramatically alters transit times and that depriming is an *in vivo* phenomenon.

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SESSION 4 RESPIRATORY PROBLEMS IN ACUTE MEDICINE

The final session began with an update on the role of non-invasive ventilation (NIV) in acute respiratory failure by Dr Mark Elliott (University Hospital Leeds). It is well established as a component of treatment in exacerbations of COPD with meta-analysis showing improved survival and reduced complication rate, including avoidance of invasive ventilation. Patients on NIV with more severe acidosis (pH <7.3) have worse outcomes than those with milder acidosis. Non-invasive ventilation is primarily aimed at patients with mildly acidotic hypercapnoeic respiratory failure, however, data currently suggest that, in the vast majority of patients deemed to require ventilatory support (even in the severely acidotic group), there is little to be lost by a trial of NIV. Controversially, a recent UK national audit revealed that a significant proportion (30%) of patients for whom NIV may have been appropriate did not receive it. Paradoxically, outcomes were worse for acidotic patients who received NIV than for those who did not. This may reflect the inappropriate use of NIV for metabolic acidosis.⁵ Such concerning data delivers a challenge to the respiratory community to define optimum care for these patients and to implement national standards.

Dr Mohammed Munavvar (Lancashire Teaching Hospitals) reviewed the current evidence on the management of parapneumonic effusion and empyema. In addition to standard antibiotic therapy and intercostal drainage, recent BTS guidelines maintain that routine use of intrapleural fibrinolytics is not indicated in pleural infection, with the possible exception of multi-loculated collections where surgery is not feasible. Surgically fit patients, however, should be discussed with the thoracic surgical team promptly in cases of persistent sepsis despite drainage and appropriate antibiotics.

The concluding presentation, delivered by Dr Sylvia Worthy (Newcastle upon Tyne Hospitals), challenged the audience to a host of radiological abnormalities presenting acutely. The key radiological features of each were discussed with particular attention paid to the difficulties of differentiating between pleural effusion, pleural thickening and consolidation/collapse on plain radiography and the usefulness of pleural ultrasonography in such scenarios.