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# Highlights from this issue

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*The Triumvirate*

## ANCIENT GREENWICH PENSIONERS

In his novel 'Bleak House' Dickens describes: '...the ancient Greenwich pensioners, wheezing by the firesides of their wards...' However, the paper by Debbie Jarvis and colleagues in this month's journal suggests that the pensioners of Britain have wheezed progressively less over the last 20 years (see page 37). So too have the pensioners of 27 other European countries as well as those in Australia. This epidemiological study describes the results of three questionnaire surveys, administered over a 20 year period and finds that the 12 month prevalence of wheeze fell by 2.4% over 20 years. The authors attribute the improvement in respiratory symptoms to a reduction in smoking by these elderly study participants. Dickens would have blamed the fog and '...the waterside pollutions of a great (and dirty) city'.

## MRI: FROM NOTTINGHAM TO NORTH CAROLINA

Sir Peter Mansfield (Professor of Physics in Nottingham) was awarded the 2003 Nobel Prize in Physiology or Medicine, for his work on MRI imaging. MRI depends of the magnetic qualities of water molecules and so he might not have predicted that MRI would be used to image a gas filled organ such as the lung. In this issue, Wang *et al*, from North Carolina, describe the use of Xenon MRI to image idiopathic pulmonary fibrosis (IPF) (see page 21). Intriguingly, MRI goes beyond imaging IPF and allows the gas transfer of  $^{129}\text{Xe}$  from alveolus, through the interstitial barrier to the red cell to be visualised. The authors describe how transfer of  $^{129}\text{Xe}$  to the red cell was significantly diminished in the bases and peripheries of the lung - where fibrosis and honeycombing are most commonly found in IPF.

## THERE'S A BUG GOING ROUND...

Parents of pre-school children with cystic fibrosis (CF) might be forgiven for thinking that their child constantly has a cough and a cold during the winter months. These children are frequently visitors to acute care or the CF centre and are frequently prescribed oral antibiotics

– commonly for 2 weeks. In this month's *Thorax*, Korten and colleagues from Bern, in Switzerland, shed new light on viral infections in young children with CF (see page 13). These data overturn popular preconceptions by showing that infants with CF, under 1 year, had similar numbers of virus positive nasal swabs to controls infants without CF. Where an infant with CF had a viral infection, their parents were less likely to report symptoms. Perhaps a justification for empiric antibiotic treatment of CF infants who are symptomatic?

## 'WHEN SORROWS COME, THEY COME NOT SINGLE SPIES, BUT IN BATTALIONS'

Like the sorrows referred to by Claudius in Hamlet, *Pseudomonas aeruginosa* comes in battalions when it infects the lungs in CF, COPD and ventilator-associated pneumonia. These battalions are highly disciplined, communicating through quorum sensing (QS) systems such as the *las* and the *rhl* systems with their cognate signalling molecules. Saint-Criq and colleagues look at the effect of *Pseudomonas* elastase (controlled by the *las* QS system) on epithelial cells and in mice (see page 49). They demonstrate that elastase decreased epithelial CF transmembrane conductance regulator (CFTR) expression and activity in epithelial cells. In mice, it led to weight loss, inflammation, injury and death. 'Not a mouse stirring...'

## SURVIVING DEATH...

Oscar Wilde famously quoted that 'One can survive everything, nowadays, except death...'. Although with the advances in critical care medicine one can now avoid death, we need carefully distinguish merely surviving from survivorship and what this means to the patient and their family. Victor Dinglas and colleagues from Baltimore investigated the perspectives of survivors, their families and the researchers on acute respiratory failure outcomes (see page 7). Using 19 outcome domains, the investigators surveyed the participants in terms of rating the importance of each domain. From 279 respondents, 80% of patients and family members supported 15/19 domains

to be used in future studies with only 6/19 domains supported by researchers. Importantly, there were four overlapping domains of physical function, cognitive function, return to work and mental health. Remember always listen to the patient and their families...

## IF HOME IS WHERE THE HEART IS, WHAT ABOUT THE LUNGS?

Dr Martin Luther King Jr. said that 'The ultimate measure of a man is not where he stands in moments of comfort and convenience, but where he stands at times of challenge and controversy'. This is true in the rehabilitation arena, in particular, for home-based rehabilitation in COPD, which is a controversial treatment as uptake is poor. Elizabeth Horton and colleagues from Leicester report the results of a non-inferiority randomised controlled trial comparing home-based rehabilitation with supervised pulmonary rehabilitation (Editors' choice, see page 29). 287 COPD patients were randomised to centre-based PR or home-based PR and there was improvement in the primary outcome of dyspnoea at 7 weeks in both groups. However, further work is needed to definitively determine if the health benefits of the standardised home-based programme are similar to supervised centre-based PR...Dr Luther King still has a point...

## LOSING WEIGHT, BREATHING BETTER...

'Don't let your happiness depend on something you may lose'. A thoughtful quote by CS Lewis but he probably was not considering the global obesity epidemic and the pilot randomised controlled trial investigating the effect a nutrition and exercise rehabilitation in obesity hypoventilation syndrome on weight loss. Swapna Mandal and colleagues from London used a 3 month multimodal hybrid inpatient-outpatient motivation, exercise and nutrition rehabilitation programme, in addition to standard non-invasive ventilation (see page 62). This approach resulted in improved weight loss, exercise capacity and quality of life at the end of the rehabilitation period, but these effects were not demonstrated at 12 months due to the limited retention of patients at 12

months. CS Lewis would perhaps want is to consider short term and long term happiness...

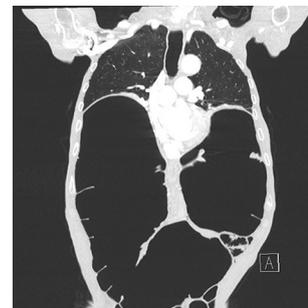
### CONSUMPTION... STILL CONSUMING

Bronte, Austen, Roosevelt, Chopin, Orwell, Henry VII and Keats are all reported to have died of consumption. Data from Andreas Fløe and colleagues from Denmark reporting the comorbidities and mortality among patients with tuberculosis still highlights the major clinical impact of TB even today (*see page 70*). The authors report the data from Danish National Patient Registry and investigated those

patients diagnosed with TB between 1998 and 2010. Of 8433 cases identified, respiratory diseases were the most common comorbidity but there was also a substantial mortality observed. Indeed, 12% of the patient died from TB with a high mortality among younger adults. We must, as the authors highlight, target high-risk TB groups in low-incidence countries.

### AND FINALLY CALL THE GAS BOARD...

A dramatic image from Marie Bruyneel and Vincent Ninane directs us to consider the all the gas compartments (*see page 96*).



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