Highlights from this issue

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PULMONARY TB – SIZE MATTERS

Sixty years ago, Riley and colleagues demonstrated that rabbits inhaling 2–3 bovine tubercule bacilli as single organisms are more likely to contract tuberculosis than animals inhaling 10,000 bacilli in large aggregates. The key factor determining infectivity is the size of the particle, with those less than 5 μm standing a better chance of reaching the favourable environment of the alveolus. Coughs produce mostly large droplets whilst tidal breathing can produce 1–5 μm particles and tidal breathing is continuous, increasing the opportunities for airborne transmission. In this issue of the journal, Wurie and colleagues explore how TB may be transmitted in man through normal tidal breathing (***see page 549***). They describe data from 188 participants of whom 64 had intrathoracic TB. These individuals were three and a half times more likely to generate bioaerosols in the range 1–5 μm, during tidal breathing, than uninfected individuals. There was considerable variability between individuals, raising the possibility of "super spreaders".

ASTHMA FE_{NO} TYPE?

The draft National Institute for Health & Care Excellence (NICE) guidelines for asthma management in adults, young people and children suggest that clinicians should *"Perform objective tests at the time of presentation (including spirometry and FE_{NO})…"* They go on to advise that we "*…do not make a formal diagnosis of asthma until objective tests have been done*". On ***page 562***, Martin and colleagues investigate the usefulness of exhaled nitric oxide in the diagnosis of asthma in adults and find FE_{NO} wanting. Using receiver operator characteristic curves, they show that FE_{NO} can be reliably used to predict response to inhaled corticosteroids but not to diagnose asthma, where reversibility and methacholine challenge have been used as the gold standard.

NASAL NITRIC – A TRAP FOR THE UNWARY!

The use of nasal nitric oxide measurements feature in another *Thorax* research letter this month (***see page 560***). Collins and colleagues evaluate nasal nitric oxide (nNO) as a screening test for primary ciliary dyskinesia (PCD). As with all screening tests, the utility depends on the prevalence of the disorder in the screened population. In patients referred to a specialist centre, the prevalence of PCD is high (31 of 282 patients referred) and the positive predictive value of nNO is around 43%. However the positive predictive value (the likelihood of someone with a positive test having the disease in question) depends of the prevalence of the disease in the population. For PCD the population prevalence is around 1/10,000, which renders nNO useless for population screening, yielding too many false positives. So if you have just purchased some new kit for measuring nitric oxide, use it wisely!

IN SEARCH OF THE FAIRY GODMOTHER

Interstitial Lung Diseases have long been the Cinderella of Palliative care and the extent of the problem has been illustrated in this month's Thorax. Data from a Swedish Registry study by Ahmadi *et al* (***see page 510***). Highlight that patients with ILD are more likely to die unexpectedly with less palliative care input and have fewer end of life discussions than patients with lung cancer. This is despite having more breathlessness and untreated end of life symptoms than patients with lung cancer. If patients with ILD are going to go to the Palliative Care Ball soon they are going to need a fairy godmother.

"TRUE IS IT THAT WE HAVE SEEN BETTER DAYS…"

Sir William Osler coined the phrase "the old man's friend" for community acquired pneumonia, and he ultimately succumbed to this disease in Oxford in 1919. Since Sir William's day the rates of pneumonia have shown no sign of abating and in the study by Quan *et al* (***see page 535***). The people of Oxford are continuing to suffer from pneumonia and the numbers of people being hospitalised are rising particularly since the mid-naughties. The reasons are unclear but do not appear to relate to improved recording, admission of patients with milder disease or the ageing population. However, despite the increase numbers mortality rates appear to be improving ever so slightly. So it appears the health care planning for improved Time to First Administration of antibiotics is likely to be the real friend of the elderly.

"BETTER THREE HOURS TOO SOON THAN A MINUTE TOO LATE…"?

NICE recommends that the Time to First Administration of antibiotics be less than 4 hours, so many may agree with Mistress Ford that *"…it is better three hours too soon than a minute too late"*. However, the BTS Audit individuals published by Daniel *et al* (***see page 568***). It was found that 37% of patients missed this standard with unsurprising adverse consequences for mortality rates. The need for rapid administration of antibiotics must be balanced with the requirement to avoid inappropriate prescriptions. Thus the challenge for the NHS, amongst many others, is to put in place processes that will facilitate diagnosis of pneumonia in a timely fashion. After all "*…delays have dangerous ends…"!*

IMAGES IN THORAX

Multicystic lung disease is a surprising finding in a toddler. What's your differential diagnosis? See ***page 575*** for clinical details and histology.