

## CONFERENCE REPORT

# Breathing new life into respiratory medicine? Report of the 2004 BTS Winter Meeting

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An overview of some of the key topics presented at the BTS Winter Meeting held in London in December 2004

The Winter Meeting of the BTS affords us the opportunity to catch up with friends and colleagues and to keep abreast of recent advances. Perhaps most importantly, it is also an ideal forum for the Society to raise the profile of respiratory medicine. This year's meeting was attended by a record 1710 delegates. What follows is a personal review.

### CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD)

COPD finally seems to be casting off its mantle as the Cinderella specialty of respiratory medicine and this was borne out by the amount of time devoted to it at this year's meeting.

A symposium on susceptibility and disease progression was well attended and there were a further eight spoken and poster sessions. A lot of interest was focused on exacerbations. The burden of these on the health service is well known and three studies examined the effect of comfort visits and the establishment of an integrated care programme on admissions.<sup>1–3</sup> The role of viral infections in the pathogenesis of COPD was highlighted by work from London and Belfast showing that the presence of respiratory syncytial virus is associated with a faster decline in lung function, that colonisation with the Epstein-Barr virus occurs in stable COPD, and that exacerbations associated with cold symptoms are more severe.<sup>4–6</sup>

Sessions on pulmonary rehabilitation revealed the importance of respiratory muscle strength in exercise limitation,<sup>7</sup> the possible use of upper arm circumference as an estimate of body mass index (BMI),<sup>8</sup> and improvements in weight and health status following food fortification and dietary advice.<sup>9</sup> A study from Leeds suggested that longer courses of pulmonary rehabilitation may lead to greater improvements in health status and exercise tolerance and, as such, raise possible health resource implications.<sup>10</sup>

A spoken session on the management of severe disease revealed that mortality in patients admitted with COPD exceeds 50% at 4 years, thus emphasising the importance of this problem.<sup>11</sup> Encouraging pilot data from the Brompton Hospital demonstrated significant benefit in some patients from bronchoscopic lung volume reduction in terms of improved lung function and reduced dynamic hyperinflation.<sup>12</sup>

We await the results of larger trials to clarify the role of this procedure. Data from the COPD and Asthma Outcome Study (CAOS) suggested that clinicians in critical care units tend to be overly pessimistic when predicting survival.<sup>13</sup> When coupled with results suggesting that 96% of survivors would wish to receive critical care again and a study from Liverpool showing that worsening health status is associated with increased willingness to receive non-invasive ventilation (NIV), one could suggest that clinicians may need to re-examine their attitudes to critical care in COPD.<sup>14–15</sup> Further food for thought was provided by a paper from primary care in South London suggesting that the palliative care needs of patients with COPD were poorly met.<sup>16</sup> A poster from Manchester showed that, at present, assessment and follow up of patients on oxygen concentrators is poor.<sup>17</sup> With this in mind, it was encouraging that the session regarding changes to the home oxygen service was well attended and provoked lively discussion.

### ASTHMA

Asthma continues to generate considerable interest—both in paediatric and adult disease, and basic and clinical science. A particular focus this year was provided by Professor Chilvers who delivered the Altounyan lecture entitled “The eosinophil is dead, long live the neutrophil”. His theme was the pathobiology of asthma and, in particular, the role of the neutrophil in the more severe disease that characterises the clinical workload in secondary and tertiary care. Reflecting clinical priorities, a number of abstracts focused on difficult asthma. Deaths in this group were reported to be related to psychosocial morbidity, poor compliance and inadequate management.<sup>18</sup> In an attempt to optimise management and reduce exacerbations, a group from Leicester described their experience using a technique based on reducing sputum eosinophils.<sup>19</sup> The same group reported findings of increased membrane bound tumour necrosis factor (TNF)- $\alpha$  on the peripheral blood monocytes of such patients,<sup>20</sup> and an approach to the management of difficult asthma using intramuscular triamcinolone—a presentation which provoked considerable debate.<sup>21</sup>

In contrast to poor compliance, the issue of steroid resistance was examined in a study by Tomlinson and colleagues who reported ongoing steroid resistance in active smokers, with the suggestion that such patients may require higher doses of steroid than their non-smoking peers.<sup>22</sup> The use of steroids in children remains a

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concern, and Jani *et al* showed that the use of higher doses of these drugs in children results in a greater rate of increase in BMI.<sup>23</sup>

A major histological feature of asthma, present in school age children and adults, is epithelial basement membrane thickening and a study from the Brompton Hospital described the appearance of such lesions at an earlier age in pre-school children with troublesome wheeze.<sup>24</sup> Rhinovirus is an important cause of asthma exacerbations in both adults and children, and Wark *et al* presented in vitro work examining the effects of rhinovirus exposure on bronchial epithelial cells, focusing on mediators of the innate immune system.<sup>25 26</sup>

The third major asthma session, held jointly with the BSACI, comprised an animated pro-con debate on possible interactions of the upper and lower airways, a topic explored further in abstracts from Ipswich on the genetic basis for a “unified airway” and the effects of corticosteroid treatment in such patients.<sup>27 28</sup> In an Olympic year it was interesting to read about the diagnosis of exercise induced asthma in Olympic athletes and, finally, Hallsworth and colleagues presented the results of a wide consultation aiming to define priorities for future asthma research, the model of which could well prove useful for those involved in setting research priorities elsewhere.<sup>29 30</sup>

### SLEEP AND VENTILATION

Those of us who wonder about the compliance of patients on continuous positive airway pressure (CPAP) would have been reassured to hear that symptomatic improvement occurs even with low compliance, but that better compliance results in greater improvement.<sup>31</sup> Less reassuring was the report of an extremely high incidence of risk factors for obstructive sleep apnoea (OSA) among drivers of large goods vehicles.<sup>32</sup> The use of non-invasive ventilation (NIV) in motor neurone disease is somewhat controversial and referral infrequent, so it was with interest that we heard Bourke and colleagues present data from a randomised controlled trial demonstrating that NIV maintains health status and improves survival in patients with normal or moderately impaired bulbar function.<sup>33</sup>

### INTERSTITIAL LUNG DISEASE

Sessions at this year’s meeting included a “state of the art” symposium and spoken presentations on molecular mechanisms and clinical aspects of pulmonary fibrosis. Disease progression is difficult to predict and we heard of possible roles for cardiopulmonary exercise testing and measurement of serum KL-6, a marker of epithelial damage, in assessing prognosis.<sup>34 35</sup> As part of the Young Investigators Symposium, Dr Johns presented data suggesting a potential role for the thrombin receptor PAR<sub>1</sub> in the response to lung injury characteristic of fibroproliferative lung diseases.<sup>36</sup> Two studies were presented from London and Dublin which sought to shed further light on the role of the growth factor TGFβ.<sup>37 38</sup> We also heard of a possible mechanism whereby simvastatin might have a role in treatment.<sup>39</sup>

### INFECTION

A number of abstracts presenting research on tuberculosis (TB) were presented this year, including an approach to screening high risk individuals in London using mobile digital radiography that was reported on BBC news.<sup>40</sup> Certainly there are great difficulties in developing models of care for marginalised groups with TB.<sup>41 42</sup> Reassuringly, levels of MDR-TB remain stable.<sup>43</sup> Work exploring basic mechanisms in TB included a presentation by Dr Elkington on the induction of matrix degrading metalloproteinases, for which he was awarded the BTS Young Investigators Prize.<sup>44</sup>

Interleukin (IL)-8 is required for the formation of granulomas and O’Kane *et al* reported a study demonstrating production of this cytokine from lung fibroblasts.<sup>45</sup> In contrast, IL-4 may contribute to a failure to contain disease and Dheda and colleagues reported their work on the effects of IL-4 and the splice variant antagonist IL-4Δ2.<sup>46</sup> A number of antimicrobial proteins confer protection in the lung, from TB and other organisms, and Derry *et al* presented an original and impressive screening method for the identification of novel proteins produced by cytotoxic lymphocytes.<sup>47</sup>

The other major infection problem is pneumonia. The PIVOT trial was a randomised study of oral versus intravenous antibiotics in children with pneumonia.<sup>48</sup> The equivalence demonstrated between such approaches will be reassuring to many paediatricians and has potentially important cost implications for the NHS. In contrast, a group from Newcastle reported findings of ongoing respiratory morbidity following episodes of childhood pneumonia which have implications for the way such children are followed up.<sup>49</sup>

### CYSTIC FIBROSIS (CF)

The 2004 BTS meeting included two spoken sessions on CF exploring “emerging issues” and developments in basic science. A group from Nottingham described a national survey of acute renal failure in CF and reported a significant increase, perhaps related to the combination of ceftazidime and gentamicin.<sup>50</sup> Using nebulised tobramycin—reported to be equivalent to intravenous in a study of acute respiratory exacerbations—may be one approach to renal protection.<sup>51</sup> Much of the airway damage in CF may be attributed to neutrophil activation and Mackerness and colleagues presented work detecting novel neutrophil stimulating mediators in CF sputum.<sup>52</sup> Elsewhere, the potential role of TGF-β<sub>1</sub> in the airway remodelling of children with CF was described by Hilliard *et al*.<sup>53</sup>

### MALIGNANT DISEASE

Developments in thoracic malignancy were discussed at an afternoon symposium. Abstract presentations were many and varied, ranging from molecular mechanisms to the organisation of care. Reflecting progress in basic science, Welsh and colleagues reported their findings suggesting that greater numbers of macrophages within tumour islets in non-small cell lung cancer are associated with improved survival.<sup>54</sup> There is currently much interest in genomics, and an abstract from Manchester reported the initial results of translating the study of tumour markers into a clinically useful tool using “fuzzy logic”, with promising results.<sup>55</sup> Elsewhere, the patchy provision of techniques such as interventional bronchoscopy and medical thoracoscopy continue to stimulate interest,<sup>56–58</sup> and Slade and Pengelly described their use of CuSum analysis to assess competency in transbronchial needle aspiration.<sup>59</sup> Crosbie and colleagues presented an audit of their experience dealing with the difficult problem of carcinoma in situ, reporting that this most often occurs in association with obvious tumour.<sup>60</sup> The incidence of mesothelioma recurrence at sites of pleural biopsy was reported as 27% from a unit where prophylactic radiotherapy was not routinely given, while Smith *et al* reported success with administering such radiotherapy as a single fraction with advantages to patients and health services.<sup>61 62</sup> Similarly, Eraut and colleagues reported success with accelerated radical radiotherapy as a more practical alternative to CHART.<sup>63</sup> Finally, while developments in treatment and biology may translate to survival advantage, it also remains crucially important that patients are referred for assessment in a timely manner and a study by Wood *et al* revealed considerable variability in the referral patterns of individual GPs to secondary care.<sup>64</sup>

## PLEURAL DISEASE

The thorny issue of which sclerosant is best for medical pleurodesis was addressed by Ladd and colleagues. They found little difference in efficacy between talc, tetracycline, and bleomycin, but increased survival with bleomycin.<sup>65</sup> An audit of Abrams' needle biopsies found the procedure to be diagnostic in less than 50% of cases.<sup>66</sup> With this in mind, it was interesting to hear of the broadly positive experience in Nottingham following the establishment of a medical thoracoscopy service.<sup>67</sup> Elsewhere we were presented with the somewhat worrying figure of a 25% complication rate associated with intercostal chest drain insertion in Norwich.<sup>68</sup> With regard to pleural infection, Maskell and colleagues introduced RAPID—a novel scoring system with a potential role in assessing risk of death from empyema.<sup>69</sup>

## AND FINALLY . . .

In his President's address, Professor Gibson expounded a passionate argument in a call for common sense whilst addressing the current obsession with evidence based medicine. The British Lung Foundation (BLF) Young Investigators Prize was won by Dr Walmsley for her presentation on the effects of hypoxia on neutrophil apoptosis<sup>70</sup> and Dr Elkington (whose work on TB has already been mentioned) was awarded the BTS prize. This stimulating session also included presentations on the role of salbutamol in ARDS and epithelial to mesenchymal transition following lung transplantation.<sup>71 72</sup>

The programme of this year's meeting was varied and interesting and the overall quality of presentations high. Last year saw the BLF achieve a record fundraising total and this fact—allied to the quality of the research presented at the Young Investigators Symposium—allows us to look to the future with optimism.

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