such a high cure and completion rate. Firstly, no outcome was reported in 18.1% (2364) of cases, and the demographics of the non-reported cases showed higher age and higher proportions of white ethnicity and pulmonary tuberculosis, all of which are more associated with adverse outcome. These individuals, if they had had reports, are likely to reduce the overall success figures as the authors themselves accept. Secondly, enhanced surveillance reports outcome if properly recorded but may miss important process errors, which would only be apparent as later relapse or drug resistance. The pilot for enhanced surveillance showed less than half were getting an appropriate four drug regimen, 11% were not on combination tablets and only 41% had minimum compliance monitoring, all factors potentially leading to later relapse. Relapse is not recorded under enhanced surveillance but between 5% and 10% of notifications have a history of prior tuberculosis treatment, suggesting their current episode is a relapse. Relapse rates after treatment are seldom reported in the UK, but would be expected to be between 0% and 3% from data from controlled clinical trials.

Modification of the reporting criteria for the UK enhanced tuberculosis surveillance system seems appropriate from the analysis but strenuous efforts need to be made to increase the level of outcome reporting above the current 82%, ideally to 100%. Short cross sectional audits may also be needed to confirm appropriate regimens, combination tablets and adequate adherence monitoring are being used.

Competing interests: None.

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Short course of antibiotic treatment in acute exacerbations of COPD

Robert Wilson

Antibiotics are commonly prescribed empirically for lower respiratory infections. Infections of the airway mucosa are much more common than pneumonia and the illness they cause is less severe because the infection is superficial, most of the bacteria being found associated with mucus in the lumen. In many cases the infection will resolve spontaneously without antibiotic treatment. Most adult patients are experiencing an exacerbation of chronic lung disease, particularly chronic obstructive pulmonary disease (COPD), when neutrophilic inflammation in response to bacterial infection leads to increased sputum volume and viscosity, and breathlessness due to airflow obstruction. In these circumstances, bacteria are cultured from sputum in about half of the cases which means that, in some of the others, accepting that sputum culture is not a sensitive investigation, antibiotics are given unnecessarily. Antibiotics are essential when a patient with severe COPD presents with purulent sputum and systemic symptoms of infection, but they are often given either to speed up recovery from a bacterial infection that

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might be expected to resolve sponta-
neously following a successful host
inflammatory response, or in a defensive
manner to avoid the risk of airway
infection progressing to pneumonia and
causing deterioration in a more compro-
mised patient whose host defences are
more seriously impaired.

In recent years attention has rightly
focused on trying to define which patients
benefit from antibiotic treatment, and
those in whom antibiotics can be avoided.
The size of the likely benefit has to be
taken into consideration when making a
decision about antibiotic treatment
because of the rise in antibiotic resistance
among common respiratory pathogens,1
which is directly related to the volume of
antibiotic consumption in a community.2
Sputum purulence has proved to be a
reliable signal of bacterial infection3 and,
together with the symptoms of increased
sputum volume and breathlessness, has
been used in COPD guidelines for anti-
biotic use. These cardinal symptoms were
used in the study performed by Anthonisen et al.3 Antibiotics or placebo
were given in a randomised, double-blind,
crossover fashion for COPD exacerba-
tions. Sputum cultures were not per-
formed, so the outcome of the study
cannot be related to microbiology. There
was a significant benefit from antibiotics
that was largely accounted for by patients
who had all three symptoms (type 1 exacerba-
tions), whereas there was no significant difference between antibiotic
and placebo in patients with only one of
the symptoms. However, in the type 1
exacerbations, 43% of patients recovered
in the placebo group within 21 days. A
recent Cochrane review4 of antibiotics
and COPD exacerbations showed that anti-
biotics reduce the risk of treatment failure
(relative risk ratio 0.47) and the number of
patients that needed to be treated to avoid
a failure was three. Antibiotics influenced
resolution of sputum purulence but did not influence recovery of peak flow or gas
dexchange.

The meta-analysis performed by El
Moussaoui et al6 published in this issue
of Thorax (see page 415) has addressed an
important aspect of antibiotic treatment.
Some COPD guidelines have recom-
ended a choice of antibiotic to use
during exacerbations, but none has
addressed the length of the course of
treatment. The authors list the benefits of
a shorter course: better patient compli-
ance, fewer side effects and, most impor-
tantly, reduced risk of antibiotic
resistance development. The result is
clear: short-course treatment—which
usually means 5 days—is equally effica-
cious as longer courses (7–10 days).
Eradication of bacteria from sputum was
also equivalent. This is a very important
message for clinicians. The result was the
same in trials in which short and longer
courses of the same antibiotic were
included and when antibiotics were
grouped by class. The authors rightly
restrict their conclusions to mild to
moderate cases. COPD is a very hetero-
genous condition and patients en-
rolled into clinical trials do not usually
have life-threatening disease, and pro-
tocols exclude sicker patients that are
more likely to fail. Trials have usually
had a primary end point soon after
the end of treatment and so may have
missed early relapse due to inadequate
treatment.

In the above-mentioned Cochrane
review6 a significant benefit for antibiotics
versus placebo was found for mortality
(relative risk ratio 0.23), but this result
was heavily influenced by a single study
in patients with severe exacerbations
requiring ventilator support5. Several
COPD studies have sought to identify
risk factors for poor outcome of an
exacerbation.8 Frequent exacerbations,
low forced expiratory volume in 1 s, co-
morbid diseases (especially cardiovascular
and diabetes), low body mass index,
current smoking habit, alcohol consump-
tion, duration of COPD and older age
have all been identified as risk factors in
different studies.8 In these patients, clin-
ical response—particularly sputum colour
and, in a hospitalised patient, return of
inflammatory markers to baseline—
should determine length of treatment.
Some patients with COPD who may have
regular sputum production and be parti-
cularly prone to infective exacerbations
have underlying bronchiectasis.9 This
is another group in which the course of
treatment might need to be longer,
although it could be argued that these
patients are particularly prone to resis-
tance development because of the larger
concentration of bacteria in the airway
lumen. Short-course treatment would
therefore still be desirable if it was proved
to be effective.

A rapid specific biomarker to identify
bacterial lower respiratory tract infec-
tions would provide a major advance in
the antibiotic management of patients
with COPD, particularly if it could also
be used to judge response to treatment.
While procalcitonin has shown some
promise in this regard,10 more work is
needed to explore its application. For
the time being, clinical judgement will
determine which patients receive an
antibiotic and the length of time for
which treatment should be given. Present
guidelines are not consistent, but puru-
ulent sputum as a marker of bacterial
infection, together with increased spu-
tum volume and/or increased breath-
lessness indicated by the study of
Anthonisen et al;5 are recommended to
judge the need for antibiotic. The meta-
analysis by El Moussaoui et al has shown
that, in patients without risk factors for
poor outcome, a 5-day course of anti-
biotic should be used. Further studies are
-needed in at-risk groups because short
courses might still be effective for some
antibiotics that penetrate well into the
respiratory mucosa, and are active
against resistant strains that are more
common in at-risk patients who have
received antibiotics previously. A weak-
ness of the meta-analysis is that most
studies include a new antibiotic seeking
registration in the short-term arm and
not older agents such as amoxicillin,
tetracycline and erythromycin. How-
ever, at the present time, few studies
have shown superiority of one antibiotic
over another in this patient group.6
Future studies should involve follow-up
for several weeks after the end of
treatment to ensure early relapse does
not occur because of bacterial persis-
tence, and should include tools such as
patient reported outcome questionnaires
to determine speed and extent of recov-
ery rather than the traditional end point
of a judgement by the clinician as to
whether or not the patient requires more
antibiotic.

Competing interests: None.


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Short-course antibiotic treatment in acute
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obstruction.
The BTS took over the entire Queen Elizabeth II Conference Centre in London again this year to host its Silver Jubilee Winter Meeting. This, the biggest and most comprehensive meeting so far, was also the first to accommodate an additional day for allied health professionals, held in conjunction with the Association of Chartered Physiotherapists in Respiratory Care (ACPRC).

Celebrating 25 years of the BTS: the Silver Jubilee Meeting

James Goldring,1 Annemarie Sykes,2 Joseph Footitt2

The BTS medal was jointly presented to Professor Peter Barnes and Dr Alistair Brewis for their outstanding contributions to respiratory medicine and, at the lively reception, Professor Sue Hill, Chief Scientific Officer at the Department of Health, presented the BTS Silver Jubilee Awards. These covered seven categories celebrating innovation and excellence in respiratory medicine care and service delivery and were a showcase of achievement through teamwork. Also at the reception, the BTS Young Investigator Prize was awarded to Dr David Simcock for his work on airway neovascularisation by airway smooth muscle in asthma.1 The BALR prize went to Dr Yang for his work on airway neovascularisation and systemic pathologies associated with fewer exacerbations, but the mechanism was unclear with no observable effect on either airflow or systemic inflammation.2 A review from Leicester of a multidisciplinary emphysema meeting for lung volume reduction surgery demonstrated an impressive throughput of patients which might advocate a more widespread use in other centres.3

Other abstracts submitted for prizes covered a wide range of topics such as statin treatment in hypoxic pulmonary hypertension,4 the search for molecules to block polymerisation of Z α1-antitrypsin5 and the role of vascular endothelial growth factor on the cell cycle of alveolar cells.6

CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD)

In recognition of the increasing interest and research in COPD, a large proportion of the programme was devoted to this topic. At the symposium "COPD – more than tobacco, not just the lung", Professor John Ayres gave a valuable global perspective of the disease, reminding us of the growing impact of biomass and vehicular pollution in the developing world. We also heard about how short-course cognitive behavioural therapy targeted at "revolving door" patients and delivered by a respiratory nurse specialist reduced acute health care utilisation in Newcastle. Along similar lines, Dr Sarah Booth raised awareness of some non-pharmacological tools such as cold facial stimulation that can be used to tackle breathlessness in COPD.

Continuing interest in co-morbidities7 and systemic pathologies8 associated with COPD were well covered. Particularly interesting was a pilot study from Edinburgh showing abnormal endothelial function in patients with COPD. Here invasive studies of forearm blood flow demonstrated impaired acetylcholine-mediated vasomotor response compared with controls,9 providing evidence for a mechanism of increased cardiovascular morbidity in COPD. The same group presented data on an association between the severity of emphysema and increased arterial stiffness, a marker of cardiovascular risk.10

Ironically, the discussions on novel therapies for COPD were centred around old medicines such as the mucolytic erdosteine11–13 and the macrolide antibiotic erythromycin. In the 1-year double-blind placebo-controlled ELECT study, the long-term use of erythromycin was associated with fewer exacerbations, but the mechanism was unclear with no observable effect on either airway or systemic inflammation.14 A review from Leicester of a multidisciplinary emphysema meeting for lung volume reduction surgery demonstrated an impressive throughput of patients which might advocate a more widespread use in other centres.15

Poster included a review of the successful establishment of the BTS home oxygen database,16 and several on exacerbation characteristics including a study on first exacerbations requiring hospital admission showing worrying deficiencies in diagnosis and treatment.17

NON-INVASIVE VENTILATION (NIV)

The delivery and experience of NIV continues to expand, but much clinical practice lacks trial evidence. Dr Mark Elliott presented valuable randomised controlled data from the SCPO trial showing that, in acute cardiogenic pulmonary oedema, NIV induced a faster improvement in respiratory distress and metabolic disturbance than standard therapy alone, and that continuous positive airway pressure and non-invasive positive pressure ventilation appear to be equally efficacious.18 Evidence from two groups19 20 21 was also presented for the usefulness of a protocol to reduce weaning time in patients on NIV in both respiratory and medical wards. There was an excellent medical student presentation from the Lane Fox Unit at St Thomas' Hospital which looked at the number of patients initiated on home mechanical ventilation (HMV) over a 2-year period; increasing numbers of patients were reported, mainly due to an expansion of the obstructive sleep apnoea/obesity group despite a decrease in HMV for neuromuscular disease.22

ASTHMA

The title of Professor Sebastian Johnson’s lunchtime lecture perhaps most appropriately summarised the consensus of delegates at the asthma sessions: “80 years of asthma research: a lot done, still more to do”. It was evident, though, that a great deal was being done, particularly on clinical aspects. These ranged from the investigation of the effects of mechanical heat recovery ventilation on asthma control23 to

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