

Table 1, SGRQ total and domains score in all visits; median (IQR) were presented

	Visit 1	Visit 2	P*	Visit 3	P#
SGRQ symptoms	69 (51-82)	69 (55-82)	0.78	69 (56-82)	0.55
SGRQ activity	54 (36-67)	50 (34-62)	0.045	48 (32-65)	0.02
SGRQ impact	80 (60-93)	79 (58-93)	0.94	79 (60-93)	0.77
SGRQ total score	64 (49-74)	64 (45-73)	0.22	61 (47-72)	0.19

(*)= Compared to visit 1;

(#)= Compared to visit 1

P22 YIELD OF MICROBIOLOGY SAMPLES TAKEN DURING BRONCHOSCOPY PERFORMED FOR THE DIAGNOSIS OF LUNG CANCER

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Introduction and Objectives Previous studies have suggested that bronchial lavage does not improve the yield of bronchoscopy if tumour is visible and biopsies and brushings are taken (1). However, no assessment was made of the microbiological yield from lavage samples. The aim of this study was to determine the prevalence and nature of positive bronchial culture in patients presenting with lung cancer.

Methods A retrospective review was conducted of the case notes of all patients between November 2009 and May 2012 who underwent a flexible bronchoscopy for the diagnosis of lung cancer, and were determined by the operator to have either a definite or probable visible malignancy. In all patients BAL had been performed and sent for microbiological investigation in addition to cytology. Type and frequency of culture were analysed, along with the relationship between culture and lung cancer histology, stage, and the performance status of the patient.

Results 95 patients underwent a flexible bronchoscopy at the time of diagnosis within the time period. The majority were male (62%) with an average age of 70 years (range 31–91). Culture was positive in 37.7% of samples. 32.5% of these organisms were gramme negative (mostly *Pseudomonas spp.* and coliform bacilli), 20.9% gramme positive (*S. pneumoniae*, *S. aureus*, MRSA), 41.9% *Candida spp.*, and 4.7% *Aspergillus spp.* The predominant form of lung cancer was non-small cell (56%, of which 58.4% were squamous), the majority of patients having advanced disease (92% stage IIIA–IV) with a good performance status (55.8% PS 0–1). Patient characteristics, tumour histology, or stage were not significantly different in patients with, or without, positive culture.

Conclusions This study has shown that more than a third of patients investigated for lung cancer had evidence of bronchial colonisation with potentially pathogenic bacteria at the time of diagnosis. This suggests that lavage ought to remain a routine aspect of bronchoscopy for cancer, as identification of bacteria at this early stage might be used to guide the choice of effective antibiotics for the treatment of subsequent pulmonary infections.

1. Waine DJ et al. *Am J Respi Crit Care Med* 2004; 169(7):A332.

P23 A MULTIDISCIPLINARY INTERVENTION TO REDUCE ANTIBIOTIC DURATION IN LOWER RESPIRATORY TRACT INFECTIONS

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Introduction Prolonged courses of antibiotics in patients with lower respiratory tract infections (LRTI) are common and may contribute to antibiotic related side effects and antibiotic resistance. Prescribing shorter antibiotic courses may be equally effective and associated with fewer side effects. We developed and implemented a multidisciplinary intervention to reduce antibiotic duration in hospitalised patients with LRTI.

Methods This was a prospective before and after evaluation study conducted at Ninewells Hospital, Dundee from November 2011–May 2012 (pre-intervention) with post-intervention data collection during June and July. The intervention is scheduled to run until November 2012 but here we present the preliminary results.

The multidisciplinary intervention consisted of automatic stop dates for antibiotics, protocolised antibiotic duration based on national guidelines and ward pharmacist feedback and reminders to stop antibiotics. Data recorded, in addition to length of antibiotic treatment, included underlying diagnosis and suspected antibiotic related side effects.

Results Pre-intervention, there were 281 patients (94 pneumonia, 121 exacerbation of COPD, 24 exacerbation of asthma and 42 LRTI/bronchitis or other chest infection). The mean duration of antibiotics was 8.3 days (range 1–21) with average by diagnosis of 9.3 days for CAP (range 5–21), 8.5 days for LRTI (3–16), 7.7 days for exacerbation of COPD (1–19) and 6.3 days for asthma (1–10). 31.3% of patients had a potential adverse effect of antibiotics.

In preliminary data from the post intervention group, there were 97 patients (45 pneumonia, 40 exacerbation of COPD, 12 LRTI/bronchitis). The mean duration of antibiotic therapy was 6.7 days (range 1–14 days), $p < 0.0001$ compared to pre-intervention. Post intervention duration of treatment for CAP was 7.0 days (1–14), $p < 0.0001$ and for COPD patients was 6.4 days (5–14), $p = 0.0008$ compared to pre-intervention. 16 (16.5%) patients post intervention had antibiotic related adverse effects, $p = 0.0005$.

There were 25 (8.9%) deaths pre-intervention and 7 (7.2%) deaths post-intervention, $p = 0.6$ suggesting the reduction in antibiotic duration did not result in poorer clinical outcomes.

Conclusion This multidisciplinary intervention reduced antibiotic duration for lower respiratory tract infections and antibiotic related side-effects. This simple, effective intervention can be readily and quickly implemented into other clinical settings.

P24 COMBATING INAPPROPRIATE USE OF ANTIBIOTICS THROUGH RAPID, ACCURATE AND COMPREHENSIVE DETECTION OF RESPIRATORY PATHOGENS USING A RESPIRATORY MULTIPLEX ARRAY

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Introduction Respiratory tract infections (RTIs) are a leading cause of mortality and morbidity worldwide and one of the greatest causes of mortality in children under 5. Most people develop an acute RTI every year and these are the most common problems dealt with in primary care. RTI symptoms are similar but can be caused by a heterogeneous range of viral and bacterial pathogens.

Antibiotics were prescribed in 68% of acute respiratory tract visits and of those, 80% were unnecessary (CDC guidelines, 2001), with acute infection likely to be self-limiting. Repeated and improper use of antibiotics is the primary cause of increasing resistance, decreasing efficacy of these essential drugs. The best way to control resistance is to decrease antibiotic misuse by implementing rapid and accurate diagnosis, facilitating appropriate treatment.

A multiplex approach for detection of respiratory pathogens allows comprehensive screening, which is more effective in terms of time and resources compared to traditional methods thus allowing severely infected patients to be treated quickly and appropriately. This study reports the assessment of clinical samples using a respiratory multiplex array in a biochip platform for simultaneous detection of 22 clinically relevant bacterial and viral respiratory pathogens within a single patient sample (Table 1) and comparison against routine diagnostic approaches.

Methods Residual clinical respiratory samples (n=502) were analysed using a Respiratory Multiplex Array applied to the Evidence Investigator analyser. This technology couples highly stringent multiplex PCR to biochip array technology. Results obtained were compared against routine diagnostic methods and % agreement determined.

Results A high level of agreement was found between TaqMan based real-time assay and the Respiratory Multiplex Array. In a considerable number of samples, additional pathogens, previously unreported were detected with the Respiratory Multiplex Array. Sample re-testing confirmed that all were positive for the additional pathogens.

Conclusions These results highlight the relevance of multiplexing for detection of co-infections, enhancing patient care. The British Lung Foundation estimate respiratory illness costs NHS £6.6billion, so there is also potential for significant cost reductions should a system be implemented that allows for rapid and accurate detection of all causative agents of infection to ensure correct treatment.

Abstract P24 Table 1 Respiratory pathogens detected with the Respiratory Multiplex Array

Adenovirus	Influenza A
Bocavirus	Influenza B
Coronavirus 229E	RSV A
Coronavirus OC43	RSV B
Enterovirus	<i>C. pneumoniae</i>
Metapneumovirus	<i>M. pneumoniae</i>
Rhinovirus	<i>L. pneumophila</i>
Parainfluenza 1	<i>H. influenza</i>
Parainfluenza 2	<i>Strep. pneumoniae</i>
Parainfluenza 3	<i>Staph. aureus</i>

P25 15 YEAR RETROSPECTIVE STUDY OF NON-TUBERCULOUS MYCOBACTERIA (NTM) ISOLATES

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Introduction The incidence non-tuberculous mycobacteria (NTM) has been growing steadily and was previously estimated between 2.9–4.43/100,000 persons. 125 NTM species have been identified due to advances in laboratory techniques with a corresponding increase of clinical presentations. Treatment is recommended if the same species is cultured on at least 2 occasions with clinical/radiological evidence for progression. Other than cystic fibrosis predisposing factors in adults include chronic lung disease, immunodeficiency, gastro-oesophageal reflux disease and post-menopausal non-smoking females.[1]

Methods 768 isolates were collected over 15 years in our regional mycobacterial database and analysed for demographic and frequency distributions using simple statistics. The data includes many single, incidental isolates as well as patients with multiple isolates and on-going symptoms.

Results We analysed 768 non-tuberculous mycobacterial cultures from 534 patients. The mean age for first positive culture was 55 (range 0–102) with 42.7% of the isolates occurring above age 65. 58% (310) of subjects were male, 61.3% were white Caucasian and 24.5% were of South Asian ethnicity. 81.4% of isolates were single with only 2% of patients culturing more than 4 isolates. The patient with most isolates (12) grew *Mycobacterium Avium* Complex (MAC) repeatedly over a 10-year time span. The most common isolate was MAC (37.0%) followed by the rapidly growing mycobacteria (RGM) which accounted for 28.4%. In descending order *M. Kansasii*, *M. Gordonae* and *M. Xenopi* accounted for 8.7%, 6.9% and 3.9% of the isolates respectively. The majority of cultures were of respiratory origin from sputum (76.2%) and broncho-alveolar lavage (7%) samples. 3.8% of samples were cultured from pus, 1.3% from blood cultures and 0.7% from lymph nodes.

Discussion In keeping with previous studies MAC was the most commonly identified mycobacterium and the most common population were older, white peoples. Our data for culture site compares to that published by the American Centers for Disease Control and Prevention. Our data highlights that a variety of NTM can be isolated from multiple locations and pose a diagnostic challenge.

1. DE Griffith et al., "An Official ATS/IDSA Statement: Diagnosis, Treatment, and Prevention of Nontuberculous Mycobacterial Diseases," *AJRCCM* 175, no.4 (February 2007): 367–416.

Management and organisation of respiratory health care

P26 RESPIRATORY PATIENT PREFERENCE AND SATISFACTION RAPIDLY EVALUATED WITH TABLET PC USING THE 18-ELEMENT CONSULTATION SPECIFIC QUESTIONNAIRE (CSQ): COMPARISON WITH SURGICAL PATIENTS

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Patient perspective is important for quality assessment of service offered by hospitals and individual clinicians, evidenced by annual surveys required by the Care Quality Commission for all English NHS Acute Trusts. Patient satisfaction has been measured in consultations in Primary Care¹. However as yet unanswered, is which aspects of consultations do patients value most, and whether this preference is dependent on patient type and mode of presentation. We used a tablet PC (Customer Research Technologies) or paper