DISTAL AIRWAY BACTERIAL COLONISATION IN PATIENTS WITH LUNG CANCER

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P Agarwal, D J Newberry, J Walker, J Mullings, S Sundaram, P C Russell. Princess Alexandra Hospital, Harlow, UK

Introduction Patients with lung cancer are at higher risk of pulmonary infection due to immunosuppression and impaired function of the natural protective mechanisms which can have an impact on oncological treatment and survival. Aims: To assess the proportion of potentially pathogenic microorganisms (PPM) that colonise the bronchial tree in patients with primary lung cancer.

Methods A bronchoscopic study of 165 patients (101 M and 64 F) aged from 31 to 96 (mean 69 years) with confirmed malignancy on bronchial sampling was conducted from January 2005 to July 2010. In all patients, bronchial washings (BW) were performed during bronchoscopy. Obtained BW fluid was subjected to microbiological examination and culture by the semi-quantitative method. A diagnostic level of >100 colony forming units (CFU) was set. Computed tomography thorax scans were also assessed for radiological signs of pneumonia.

Results In 27 (16.4%) of 165 patients, bronchial colonisation of PPM was >100 CFU. In 28 patients (17.0%), the culture of PPM was <100 CFU. The presence of fungi and upper respiratory tract flora was confirmed in 24 (14.5%) and 35 (21.2%) patients, respectively.

Mycobacterium Tuberculosis was negative in the 159 patients that had been tested and Mycobacterium Fortuitum was isolated in one patient. Sixteen (9.7%) patients were colonised with Gram positive PPM. The most frequently isolated PPM was Coliform (n=9, 5.5%) followed by Staphylococcus aureus (n=8, 5%) and Streptococcus pneumoniae (n=5, 3.0%). Bronchial colonisation of PPM was highest in patients with small cell lung carcinoma (5/26, 19.2%) and similar between primary adenocarcinoma (4/30, 13.3%) and squamous cell carcinoma (12/62, 19.4%). Four multi-drug resistant strains of bacteria (2.4%) including MRSA (n=2) were isolated. In five patients (3.0%), the bronchial tree was colonised simultaneously by two or more types of PPM. A third (9/27) of patients with PPM also had radiological evidence of pneumonia.

Conclusions Less than 20% of patients with lung cancer had bronchial colonisation of microorganisms above the assumed diagnostic level. Approximately two-thirds had colonisation with Gram-positive bacteria in their distal airways. Bronchial bacterial colonisation appears to be slightly higher in patients with small cell lung cancer. The identification of potentially pathogenic microorganisms in the distal airways of lung cancer patients, especially at the time of diagnosis, is clinically important before deciding future management strategies. An empirical antibiotics policy would be useful in these patients.
Conclusions Between 2003 and 2008, 27% of patients at our cardiothoracic centre for lung cancer underwent a futile thoracotomy. High SUVmax, the presence of lymphovascular invasion and tumour size $\geq$3 cm are predictors of FT. Future, prospective studies employing adjuvant chemotherapy in these patient groups are warranted.

Organisation of respiratory care

One blood gas is not enough to assess a patient for LTOT—how to kiss goodbye to circa £10 million in England

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W Alwan, N Stolagiewicz, N Raison, R Saha, P Murray. St Peter’s Hospital, Chertsey, UK

Introduction and objectives COPD is the most common chronic lung disease in the developed world yet many patients do not present until they have advanced disease. Screening to identify those with early obstructive airways defects with spirometry may enable earlier treatment and enrolment in smoking cessation programs. Wide-spread spirometric screening for COPD in the general population is unlikely to be cost-effective. Cardiology inpatients often share similar risk factors to those with COPD; smoking in particular. We hypothesised that screening patients admitted to our coronary care unit would be an effective way of identifying patients at increased risk of developing COPD by using spirometry to detect early obstructive airways defects.

Methods Patients admitted to a coronary care unit at a district general hospital were selected for spirometric assessment. Medically unstable individuals, deemed as those with a modified early warning (MEWS) score of 2 or more were excluded. Forced volume capacity (FVC) and Forced expiratory volume in one second (FEV1) were calculated using a Vitrugraph alpha spirometer. The GOLD (Global initiative for Chronic Obstructive Lung Disease) criteria were used to categorise patients according to COPD severity. Those who were found to have airway obstruction were offered repeat testing following discharge.

Results 20 patients were in the initial study population. Four patients were excluded—three because of poor technique and one who had pre-existing COPD. No other patients had any formal diagnosis of respiratory disease. Of the 16 patients, 10 (62.5%) had objective airways obstruction; 6 (37.5%) patients had GOLD stage I, 5 (18.8%) patients GOLD stage II and 1 (6.3%) patient had GOLD stage 3 disease. Of these 10 patients, seven were smokers or ex-smokers. Amongst patients with known ischaemic heart disease, 69.2% had a degree of airways obstruction, whilst 77.8% of patients with a history of smoking had an obstructive picture on spirometry.

Conclusion Coronary care unit inpatients represent an effective target population to screen for potential obstructive airways disease. Identifying patients with ischaemic heart disease and/or a smoking history will allow patients to be risk-stratified further and increase the sensitivity of spirometry. Our study compares favourably with other methods of identifying high risk groups for screening.

Abstract P224 Table 1 A table to show various proportion of patients found to have airway obstruction on spirometry

<table>
<thead>
<tr>
<th>GOLD stage</th>
<th>All patients (n=16)</th>
<th>Patients with IHD (n=13)</th>
<th>Current &amp; ex smokers (n=9)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>6</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>1</td>
<td>6</td>
<td>5</td>
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<td>2</td>
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<tr>
<td>3</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Percentage of patients with obstructive disease</td>
<td>62.5%</td>
<td>69.2%</td>
<td>77.8%</td>
</tr>
<tr>
<td>Percentage of patients with normal spirometry</td>
<td>37.5%</td>
<td>30.8%</td>
<td>22.2%</td>
</tr>
</tbody>
</table>

First national survey of the respiratory physiotherapy workforce

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C Mikelsons, M Buxton. Royal Free Hospital, London, UK; NWLH Trust & Brent PCT, London, UK

In 2008, the RCP/BTS COPD Audit reviewed the multidisciplinary workforce provided by acute Trusts in managing the care of patients with COPD. The results showed that nationally, the median number of respiratory specialist physiotherapists employed in each hospital was 1 (Abstract P225 Table 1), highlighting that the understanding of the number and speciality level of this workforce is poorly recognised by other professionals. In conjunction with the BTS, and to complement the recently published BTS/ACPRC Physiotherapy Guidelines on the Spontaneously Breathing Adult Medical Patient (2009), a survey of the respiratory physiotherapy workforce was carried out in October 2009. An electronic