Abstract P239 Table 1 Radiation exposure in cystic fibrosis

<table>
<thead>
<tr>
<th></th>
<th>Mean % predicted FEV₁ (SD)</th>
<th>Mean CXR (% impacting care)</th>
<th>Mean CT thorax (% impacting care)</th>
<th>Mean HRCT (% impacting care)</th>
<th>Mean Radiation Dose (mSv) (% impacting care)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All patients</td>
<td>75.7 (23)</td>
<td>2 (10.7)</td>
<td>0.04 (40)</td>
<td>0.03 (37.5)</td>
<td>1.66 (54)</td>
</tr>
<tr>
<td>CFRD (n=102)</td>
<td>66.2 (22.6)</td>
<td>2.58 (8.7)</td>
<td>0.05 (60)</td>
<td>0.04 (50)</td>
<td>2.62 (55)</td>
</tr>
<tr>
<td>DIOS (n=5)</td>
<td>88.3 (28.5)</td>
<td>4.2 (9.5)</td>
<td>0.2 (0)</td>
<td>0</td>
<td>6.83 (31)</td>
</tr>
<tr>
<td>Transmissible Pseudomonas (n=109)</td>
<td>70.7 (22.4)</td>
<td>2.4 (9.8)</td>
<td>0.05 (40)</td>
<td>0.04 (50)</td>
<td>2.39 (52)</td>
</tr>
<tr>
<td>Other Pseudomonas (n=75)</td>
<td>77.4 (25.8)</td>
<td>1.8 (10.4)</td>
<td>0.03 (100)</td>
<td>0.03 (50)</td>
<td>1.12 (50)</td>
</tr>
<tr>
<td>B Cepacia (n=10)</td>
<td>69.7 (17)</td>
<td>1.5 (13.3)</td>
<td>0</td>
<td>0</td>
<td>1.01 (7)</td>
</tr>
</tbody>
</table>

**Results**

Full prescription data were received for 22 of the 26 patients included in the study. Of these 15% (2/13) were adherent; 25% (3/13) were partially adherent and 62% (8/13) were non-adherent with nebulised colistin. 26% (5/19) were adherent; 26% (5/19) were partially adherent and 62% (8/13) were non-adherent with tobramycin. 13% were partially adherent and 48% (9/19) were non-adherent with dornase nebulised colistin. 26% (5/19) were adherent; 26% (5/19) were partially adherent and 62% (8/13) were non-adherent with tobramycin.

**Conclusions**

The use of prescription data provides useful information regarding adult CF patients’ adherence with high-cost nebulised therapy. In our clinic adherence rates were low, and CF clinicians were poor at predicting adherence rates in individual patients. Used in isolation prescription data are a useful indicator of non-adherence, but does not actually measure positive adherence without consideration of other methods of measurement. We are currently extending this study to compare pharmacy issue data with other methods of measuring adherence in adult CF patients.

**REFERENCES**


**P240 PNEUMOTHORAX MANAGEMENT IN CYSTIC FIBROSIS PATIENTS**

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**Introduction**

Spontaneous pneumothorax is a well-recognised complication in cystic fibrosis and is associated with increased morbidity and mortality. Although chemical pleurodesis and surgery are successful in preventing recurrence in non-CF patients, there are few data regarding their efficacy in CF.

**Method**

To look at this further we reviewed the management and outcome of all 28 patients (mean age at first pneumothorax 26 years [range 18–54], mean FEV₁ 32% predicted [17–68], 18 female) in our centre who had developed a pneumothorax (58 episodes [1–7]) from 1993 to 2010.

**Results**

Nine sustained bilateral pneumothoraces (either at initial presentation or as a subsequent event) and 16 recurrence (mean interval 4 months [1–12]). The outcomes of the initial and second line treatments are shown in the Abstract P240 table 1. 14 patients (50%) died within 12 months and 20 (71%) within 2 years of their first pneumothorax, and five deaths occurred after surgery (mean 10 days [3–21]). The highest risk of recurrence occurred in the chest drain group (62%) followed by chemical pleurodesis (with 4 g talc) (57%), observation (40%) and the surgical group (20%).

Abstract P238 Figure 1 Percentage adherence with nebulised treatments in cystic fibrosis.
Abstract P240 Table 1  Pneumothorax management in cystic fibrosis patients

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Episodes of pneumothorax</th>
<th>Resolution rate</th>
<th>Second line treatment</th>
<th>Complications</th>
<th>Late recurrence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observation</td>
<td>13</td>
<td>8 (62%)</td>
<td>4 (chest drain)</td>
<td>0</td>
<td>4 (40%)</td>
</tr>
<tr>
<td>Chest drain</td>
<td>22</td>
<td>13 (59%)</td>
<td>8 (surgery)</td>
<td>4 deaths</td>
<td>8 (62%)</td>
</tr>
<tr>
<td>Chemical (talc) pleurodesis</td>
<td>18</td>
<td>6 (33%)</td>
<td>2 (surgery)</td>
<td>1 death</td>
<td>4 (57%)</td>
</tr>
<tr>
<td>Surgery</td>
<td>10</td>
<td>5 (50%)</td>
<td></td>
<td>5 deaths</td>
<td>1 (20%)</td>
</tr>
</tbody>
</table>

Conclusion  Thus, we have confirmed that spontaneous pneumothorax is a poor prognostic factor in CF, with 57% of patients experiencing a recurrent pneumothorax within the first year and poor one and 2-year survival rates. Surgical treatment was associated with a lower risk of recurrence, but at the expense of an increase in mortality. Randomised controlled trials of treatment options and the formulation of guidelines are required to determine the timing and optimal management to prevent recurrent pneumothorax in CF patients.

P241  ACCUCHEK (TM) MEASUREMENT OF BLOOD GLUCOSE CORRELATES WITH TRUE LAB GLUCOSE MEASUREMENT IN CHILDREN SCREENED FOR CYSTIC FIBROSIS RELATED DIABETES

doi:10.1136/thoraxjnl-2011-201054c.241

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Background  Screening for cystic fibrosis related diabetes (CFRD) is recommended as part of the cystic fibrosis annual review. For children over 10 an oral glucose tolerance test (OGTT) is recommended, but this is time consuming and adds to the burden of assessments and investigations of the annual review. As part of a proposed wider pragmatic study to evaluate the feasibility of home OGTT testing in this patient group, we assessed the level of agreement between blood glucose concentration measured by near-patient testing using the Accuchek glucometer and that measured in the laboratory using standard methods (True Lab Glucose—TLG).

Abstract P241 Figure 1

Methods  26 children with CF aged 1 yr—16 yrs undergoing annual review were studied. Blood taken at the time of venepuncture was tested for glucose concentration using an Accuchek glucometer, and results compared with TLG. For children under 10 a single, random blood glucose was tested using each method. For those aged 10 or over samples taken after an overnight fast, and 2 h after a standard OGTT oral glucose load were tested using each method. Bland and Altman statistics were used to assess limits of agreement between methods of glucose measurement.

Results  51 pairs of glucose measurements were obtained. TLG measurements ranged from 4.1 to 10.6 mmol/l. Abstract P241 Figure 1 shows the Accuchek glucose measurement plotted against the TLG for each sample, and the line of equality. The agreement between Accuchek and TLG was investigated using the method of Bland and Altman and showed that the Accuchek gave results a mean (SD) of 0.26 (0.84) mmol/l higher than values obtained on TLG.

Conclusions  There is a clinically acceptable agreement between blood glucose measured by Accuchek compared with TLG. Just one child with a TLG result that might have prompted further investigation could have been missed, had Accuchek been the sole method used. This suggests that blood glucose measurement in the context of OGTT screening for CFRD could perhaps be performed using near-patient testing in an out of hospital setting (eg, by parents at home) without compromising test validity. Further research is needed to establish if this is the case.

P242  BONE DENSITY AND TESTOSTERONE LEVELS IN MALE CYSTIC FIBROSIS PATIENTS

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Background  Cystic Fibrosis (CF) is the commonest inherited life threatening condition in the UK and is a multisystem disease. CF related low bone mineral density (BMD) is defined as a Z score 2 SDs below the age and gender matched mean reference value and has been reported in 13% of CF patients.1 Its aetiology is multifactorial with hypogonadism being a potential factor. CF Trust guidelines2 suggest BMD should be measured and addressed regularly and testosterone levels measured annually in adult males.

Aim  To assess the prevalence of low BMD and testosterone in male CF patients attending the All Wales CF Centre.

Methods  Annual review records (2008—2009) of BMD derived from DEXA scans and testosterone levels were reviewed retrospectively.

Results  65 male patients (age 18—51 years) were included of whom 60 had a recorded testosterone and BMD. 12 patients (20%) had CF related low BMD (at hip or lumbar spine) of whom three had a low testosterone (<8.0 nmol/l). 12 (20%) patients had low testosterone levels. Of these twelve, three had low leutinising hormone (LH) and nine normal LH and all had normal levels of follicle stimulating hormone.

Discussion  CF related low BMD occurs commonly in men with CF with a quarter of those with low BMD also having low testosterone levels. Low testosterone levels per se also occur frequently in this population and recent CF Trust guidelines3 have suggested an endocrinology opinion should be sought where testosterone is found to be low.

REFERENCES