



Abstract P238 Figure 1 Percentage adherence with nebulised treatments in cystic fibrosis.

Results Full prescription data were received for 22 of the 26 patients included in the study. Of these 15% (2/13) were adherent; 23% (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 48% (9/19) were non-adherent with dornase. 100% (8/8) patients were adherent with nebulised tobramycin. The cystic fibrosis team correctly predicted only 40% (111/280) of the respective adherence rates found.

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 accurately 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.

P239 RADIATION EXPOSURE IN ADULTS WITH CYSTIC FIBROSIS

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Introduction Patients with CF can expect to undergo many investigations using ionising radiation for the management of their disease: now that the majority of patients will survive well into their 5th decade, life-time exposure to such radiation, a known risk factor for the development of malignancy, may be important. To investigate this further, we looked at the amount of ionising radiation given in our adult CF clinic over a 1-year period.

Methods All imaging studies associated with ionising radiation in 253 adult CF patients were reviewed and assessed for their impact

on management. Radiation was calculated using standard reference doses¹⁻³ and expressed as (milliSievert [mSv]), also referred to as the effective dose.

Results A summary of the results can be found in the Abstract P239 table 1. There was an average annual radiation dose of 1.66 mSv with 54% of studies leading to a change in management. Overall, although only 11% of chest x-rays altered patient management, patients with more severe CF disease (DIOS, CFRD and infection with transmissible Pseudomonas strains) had a greater cumulative radiation dose and this was more likely to alter management.

Conclusions Although the CF population receives a significant dose of radiation from medical investigations each year, many impact on patient management. CFRD, DIOS and infection with transmissible Pseudomonas are associated with greater levels of radiation than the average CF population, in keeping with more significant disease burden in these individuals. Care should be taken when ordering investigations associated with ionising radiation, to reduce the long term effects, as life expectancy is increasing.

REFERENCES

1. Wall BF, Hart D. Revised radiation doses for typical X-ray examinations. Report on a recent review of doses to patients from medical X-ray examinations in the UK by NRPB. National Radiological Protection Board. *Br J Radiol* 1997;**70**:437-9.
2. United Nations Scientific Committee on the Effects of Atomic Radiation. *Sources and Effects of Ionizing Radiation*. 2008.
3. Mahesh M. Fluoroscopy: patient radiation exposure issues. *Radiographics* 2001; **21**:1033-45.

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 P239 Table 1 Radiation exposure in cystic fibrosis

	Mean % predicted FEV ₁ [SD]	Mean CXR [% impacting care]	Mean CT thorax [% impacting care]	Mean HRCT [% impacting care]	Mean Radiation Dose (mSv) [% impacting care]
All patients (n=253)	75.7 [23]	2 [10.7]	0.04 [40]	0.03 [37.5]	1.66 [54]
CFRD (n=102)	66.2 [22.6]	2.58 [8.7]	0.05 [60]	0.04 [50]	2.62 [55]
DIOS (n=5)	88.3 [28.5]	4.2 [9.5]	0.2 [0]	0	6.83 [31]
Transmissible Pseudomonas (n=109)	70.7 [22.4]	2.4 [9.8]	0.05 [40]	0.04 [50]	2.39 [52]
Other Pseudomonas (n=75)	77.4 [25.8]	1.8 [10.4]	0.03 [100]	0.03 [50]	1.12 [50]
B Cepacia (n=10)	69.7 [17]	1.5 [13.3]	0	0	1.01 [7]