143 Does increased frequency of sputum sampling alter antibiotic choice during exacerbations?

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Background: UK CF Trust clinical guidelines recommend that sputum samples are obtained at the onset of a respiratory exacerbation and that antibiotic choice is based on resistance patterns of recent sputum cultures. An audit was performed within our adult CF unit to determine how often sputum samples are collected during an inpatient admission for IVs and whether admission sputum samples are used to make decisions regarding changes in antibiotic treatment.
Methods: A retrospective study of all inpatient record forms in a 6 month period. Information on frequency of sampling and antibiotic treatment was collected from all CF inpatients with chronic *Pseudomonas aeruginosa* (n = 21). Data was categorised into time periods and summarised using descriptive statistics.
Results: 69 sputum samples were collected during 31 admissions (median, 3; range, 2–6 samples per admission). 12 repeat samples were obtained within 3 days of admission. The most common length of time for retest was 4–7 days. Common reasons for repeat sputum samples included local policy, detection of atypical organisms, deterioration in spirometry and appearance of sputum. Antibiotics were changed on only two occasions, however this was due to slow improvement and suspected portacath infection rather than change in sputum resistance pattern.
Conclusion: In our CF centre antibiotic treatment is seldom changed on the basis of admission sputum culture results. Although an admission sputum sample may be important repeated sampling may be unnecessary. Collaboration with bacteriology laboratories is essential to develop and implement local guidelines in order to improve the efficiency of this service.

144 The significance of complete pulmonary function test data in the respiratory exacerbation of cystic fibrosis

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Respiratory exacerbation in cystic fibrosis patients is characterized by increased sputum that may become more purulent. The detection of the exacerbation is based mainly on clinical subjective parameters. FEV1 measurements are accepted as gold standard to be used for the life-time of the patient but do not adapt fast enough after resolution of an exacerbation. We compared parameters that are affected by the uneven distribution of ventilation in the lung due to increase sputum.
Methods: A Zen body plethysmograph was used to measure TLC, FEV1 and DLCO (CO/CH3 mixture). TLC was also calculated by the volume of CH3, the angle of the slope of phase III was calculated in 7 CF patients at the beginning of the respiratory exacerbation and after 2 weeks of antibiotic treatment. Patients were 19–26 years old (4M/3F).
Results: FEV1 changed by 9.8+7.41%, TLC(pleth) was stable 0.9+8.7%, RV/TLC decreased by 23.8+ 23.4% and TLC(gas) increased by 5+36.6%. The difference between TLC(pleth) and TLC(gas) decrease was-24+26.4%.
Conclusion: Despite the small number of patients in the study we show that the changes in the parameters affected by the unevenness of distribution of ventilation (m/p reflecting the increased sputum in the airway) are more pronounced than FEV1.

145 Clinical correlates of hypermutator *P. aeruginosa* in CF

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Introduction: Hypermutator *P. aeruginosa* constitutes an important part of the microbiology of the CF lung, but the clinical correlates of their presence have not been reported in the literature.
Methods: 161 consecutive *P. aeruginosa* isolates from 40 patients with CF were collected over a period of 6 months. Each was processed, in triplicate, as follows: a single colony was cultured overnight in 20 ml of Mueller-Hinton broth, centrifuged then resuspended in 1 ml phosphate-buffered saline and serially diluted. 10 µl of each dilution was spotted onto plain MH agar and MH agar containing 300 µg/ml rifampicin then incubated at 37ºC. Mutant frequencies were determined by comparing colony counts on the two agar plates, and isolates with a result greater than 20 times that of strain PAO1 were considered hypermutators.
Results: 47 (29.2%) isolates were hypermutators, and these were isolated from 16 (40.0%) patients. Mean FEV1 was lower in patients with hypermutators (40.2% predicted vs 58.6%, p = 0.008, Mann-Whitney), and so was mean FEV1/FVC (53.3% vs 64.2%, p = 0.028, Mann-Whitney). There was a trend towards association with lower BMI (mean 20.6 vs 22.5, p = 0.058, Mann-Whitney) and higher azithromycin use (64.3% of patients vs 29.2%, p = 0.087, Chi^2). No association was found with age, sex, number of courses of intravenous antibiotics in the preceding year, presence of liver disease, presence of diabetes, use of nebulized tobramycin, or use of nebulized colistin.
Conclusions: The presence of hypermutator strains of *P. aeruginosa* in adults patients with CF was associated with poorer lung function. There was a trend towards an association with lower BMI and with azithromycin use.

146 *Mycobacterium abscessus* infection in lung transplant patients: Review of our series

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Lung transplant (LT) patients are a special risk group of infection, particularly those with cystic fibrosis (CF).
Objective: To analyze *Mycobacterium abscessus* infection in our LT series.
Material and Methods: Global number of patients 317 (65 with CF). Study period: February 1990-December 2006. Isolation of the microorganism from different biological samples.
Results: *M. abscessus* was isolated in 3 patients (all CF): 1 in Knee; 1 in bronchoalveolar lavage (BAL) and in only 1 patient was a disseminated infection established. One year after LT, a small subcutaneous nodule was casually detected beneath the thoracotomy incision, with no other findings. *M. abscessus* was isolated from the aspirated material, and posteriorly from bone marrow, blood culture, BAL and bronchial biopsy. Antecedents prior to LT: *S. aureus* colonization and sputum positivity for Aspergillus fumigatus and Scedosporium apioespermum. Tuberculin testing and repeated sputum cultures in Löwenstein medium proved negative for tuberculosis. Treatment was started on the basis of the antibiogram findings with ciprofloxacin and linezolid. The latter was suspended after one month due to bicytopenia, with replacement by clarithromycin for 3 months. Eighteen months later the patient remains asymptomatic.
Conclusions: (1) The incidence of *M. abscessus* infection in our series is very low and corresponding to CF patients. (2) The infected patient described is the only case with sepsis and multisystem spread reported. (3) The important mortality of such cases reported in the literature makes early diagnosis and treatment essential.