139 Cefradine for anti-staphylococcal prophylaxis in children with cystic fibrosis

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Introduction: Systematic review supports anti-staphylococcal prophylaxis in young people with cystic fibrosis (CF). It is unclear which antibiotic to use, however data from clinical trials suggest that the use of cefalexin, a broad spectrum cephalosporin (CS), may predispose to early *Pseudomonas aeruginosa* infection. For 15 years, we have employed a different 1st generation CS, cefradine, which has a narrow spectrum of action particularly against *Staphylococcus aureus* (SA). The aim of this audit was to evaluate our current anti-staphyloccoal guidelines.
Methods: Retrospective case note review of all patients receiving care from a regional paediatric CF unit, 2004–06.
Results: Case notes from 88 patients were reviewed. 67 (76%) were on cefradine. Over the 3 year period the annual prevalence of SA isolation was 12%. In total, SA was isolated in 48 respiratory cultures from 22 patients (once only in 11). There was no difference in prophylactic cefradine use in patients in whom SA was isolated and those with no SA isolation (16/22 versus 51/66). The annual prevalence of MRSA isolation was 10.5%. 4 patients had both SA and MRSA isolated. SA was fully sensitive aside from 5 isolates which were resistant to erythromycin.
Discussion: Use of cefradine as prophylaxis in our clinic does not appear to be associated with an increase in MRSA prevalence or the emergence of resistant SA. Prevalence of positive SA isolates is low compared with clinics not using SA prophylaxis.

140 A prospective trial on the efficacy and tolerability of twice-daily dosing (TDD) versus once-daily dosing (ODD) amikacin in cystic fibrosis patients

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Aim: to determine if pharmacodynamic properties (concentration-depended bacterial killing) of aminoglycosides has an influence on clinical outcome in CF.
Methods: 15 children with CF (7–17 years) were treated cross-over with TDD (15–20 mg/kg day) and ODD (15–20 mg/kg day) in combination with ceftazidime or meropenem for 14 days. Lung function (FVC, FEV1), *P. aeruginosa* colonies, nephrotoxicity (β2-microglobulin), ototoxicity (distorsion product otoacoustic emission) were assessed before and after therapy (day 1, 14). Besides this serum levels (maximum and minimum) of amikacin were measured. (TDx).
Conclusion: ODD was as effective as TDD application. With respect to ototoxicity and nephrotoxicity there was no increased risk with once-daily dosing.

141 FEV1% predicted may not be a simple end point for CF studies

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FEV1% predicted is the conventional outcome for CF lung disease studies. In a phase III multicentre study of the safety and efficacy of dry powder colistimethate, a planned interim evaluation of baseline FEV1% predicted was performed, to check for variability. The study recruited from 55 European CF centres (unequal recruitment between centres). The admission criteria demanded patients with CF aged 6 years and above, with an FEV1% predicted (Knudson correction) between 25–75%.
The mean pre-randomization FEV1% predicted for 257 eligible patients screened was 50.589 (SD = 13.631, 95%CI = 48.915–52.264). The data were not normally distributed, and the Anderson Darling Normality test gave an A-squared value of 1.903, indicative of a non-normal distribution. There are two long tails, and graphical representation suggests that there may be a bimodal distribution. There were apparent inter-country differences. The mean FEV1% predicted for Germany, N = 57 was 52.16 (SD = 12.35), mean FEV1% predicted for Poland, N = 75 was 47.71 (SD = 14.29). These were not statistically significantly different. This may represent different standards of treatment in different countries but more patients are needed to detect any difference.
FEV1% predicted data are not normally distributed, and analysis may require more sophisticated methods which have not been addressed in past publications using lung function as an outcome. The possibility of different populations of CF patients defined by lung function may exist. The design of clinical trials of antibiotics is heavily dependent on published literature data, and differing demographics both geographical and related to general improvement in treatment in time may mean that assumptions about FEV1% predicted might give misleading conclusions unless advanced statistical approaches are applied.
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142 Frequency of sputum sampling in an adult CF outpatient clinic: How much is too much?

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Background: Regular bacteriology surveillance is associated with improved health in CF, however excessive testing is expensive and may be unnecessary. We have adopted UK CF Trust clinical guidelines which recommend that sputum samples should be obtained at each outpatient clinic, routinely every 3 months and at the onset of an exacerbation. There is no guidance regarding the optimal timing for repeat samples. The aim of this audit was to determine how closely we adhere to our local guidelines.
Methods: A retrospective study of patient record forms in a 6 month period between 01/01/06 and 30/06/06. Information on frequency of sampling was obtained from all CF outpatients with chronic *Pseudomonas aeruginosa* (n = 80). The data was categorised into time periods and summarised using descriptive statistics.
Results: 190 sputum samples were obtained from outpatients (median, 3; range, 0–10 samples per patient) within the 6 month period. 37 repeat samples were obtained within 7 days. The most common length of time for retest was 1–3 months. The most common reasons for retest included attendance at clinic, use of home IV antibiotics, change in therapist, miscommunication and lack of guidelines. Others included detection of atypical organisms, appearance of sputum and deterioration in spirometry.
Conclusion: Sputum samples are sent too frequently at our CF centre. The development and implementation of comprehensive local guidelines on sputum sampling is essential to reduce cost and improve efficiency of this service.