203 Low dose azithromycin may slow the decline of respiratory function in cystic fibrosis

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Background: The positive effect of azithromycin (AZM) on lung function in Cystic Fibrosis (CF) patients have been showed by many clinical trials, but studies were less long than 1 year.
Aim: To evaluate the effect of a long course of low dose AZM on lung function in CF patients.
Subjects and Methods: 43 patients (26 F) with chronic infection by *Pseudomonas aeruginosa* (PA), age ranged between 6 and 39 years (mean ±SD: 17.8±7.4 years) had a AZM (250 mg/day) 3-years treatment. In all patients FVC, FEV1, FEF 25–75, expressed as percentage of predicted, and SpO_2 (%), were measured at 3 month intervals and were compared with the corresponding values recorded at 3 month intervals during 3 years before starting AZM treatment. Linear regression analysis was used and a p value <0.05 was considered as significant.
Results: The change in lung function and oxygen saturation observed during the 3 years before starting AZM treatment was significantly different from that during the 3 years, when patients were treated (table).

	FVC	FEV1	FEF25/75	SpO_2
Before AZM	–2.7±1.1*	–3.6±1.2*	–5.7±1.7*	–0.2±0.1*
During AZM	0.5±1.1*	0.2±1.2*	–0.1±1.7*	0.2±0.1*

*$p < 0.05$.

Conclusions: Our results show that in patients with CF low dose AZM treatment can slow the decline in pulmonary function, in spite of the increase of age and worsening in pulmonary disease.

204 Effect of combination of inhaled corticosteroids and long acting beta two agonists (LABA) on airways resistance (Rint) among preschoolers with cystic fibrosis

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Background: In cystic fibrosis (CF) lung function testing is a tool for monitoring progression of lung disease. Bronchodilators are used in CF as a therapeutic tool to facilitate airway clearance and to provide protection against bronchoconstrictors of various drugs.
Aim: The objectives of this study were: (a) To compare airways resistance measured by interrupter technique (Rint) among 28 preschool children with CF and 27 healthy controls. (b) To assess the relationship of Rint with atopy and (c) To assess the effect of inhaled corticosteroids plus LABA on Rint among preschoolers with CF.
Method: 28 preschoolers with CF (mean age 3.55± 1.56 years) and recurrent cough and wheeze and 27 healthy control children were studied. 13/28 children with CF were on prophylaxis with inhaled corticosteroids plus LABA for six months. Rint and total serum IgE were measured.
Results: As compared with control children, children with CF had significantly higher Rint, (1.183±0.39 vs 0.79 ± 0.20 kPa L^{-1} second, $p < 0.001$). Rint was not correlated with history of atopy ($p = 0.137$), or total IgE ($p = 0.372$, $R = 0.259$) among children with CF. Rint z-scores were significantly lower in children who were on inhaled corticosteroids plus LABA, compared to those on no anti-asthmatic prophylaxis ($p = 0.025$).
Conclusions: Preschoolers with CF have significantly higher Rint than healthy children. Children with CF and with a history of respiratory symptoms may benefit from inhaled corticosteroids plus LABA.

205 Predictors of time to next exacerbation in adults with cystic fibrosis

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Background: Being able to predict the time to next hospital admission for respiratory exacerbation could be useful in guiding the provision of outpatient services and in designing clinical trials with time to next exacerbation as an outcome. This study aimed to examine variables that can be measured at discharge from hospital after a respiratory exacerbation to determine whether they could predict the time to the next hospital admission for a respiratory exacerbation.
Methods: Data were collected prospectively from 110 adults with cystic fibrosis who were admitted to hospital consecutively for a respiratory exacerbation. The variables initially considered as potential predictors of time to next exacerbation included: best lung function in the prior 6 months, reduction in lung function between best and admission, lung function and symptom severity at admission and at discharge, length of admission, and gender. Wherever there was substantial collinearity ($r > 0.80$) between multiple variables, one of the correlated variables was chosen for use in a multiple regression analysis.
Results: Five variables without collinearity were analysed: FEV1 at admission, reduction in FEV1 at admission, symptom severity at admission, best FVC in the prior 6 months, and length of stay. Only two variables accounted for >10% of the variability in time to next exacerbation: FEV1 at admission (18%) and best FVC (11%). A multiple regression model with these predictors only accounted for 21% of the variability.
Conclusion: The variables we examined (individually or combined in a model) did not provide clinically useful prediction of the time to next exacerbation in adults with cystic fibrosis.

206 Eosinopenia and severity of pulmonary exacerbations in adult cystic fibrosis patients

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Objectives: Previous studies have shown eosinopenia to be associated with increased mortality and severity in COPD exacerbations and to be a reliable marker of sepsis in critically ill patients. This study aims to assess whether there is an association between eosinopenia and severity of pulmonary exacerbations of CF.
Methods: A retrospective analysis of all patients receiving i.v. antibiotics for pulmonary exacerbations between 01/12/2008 and 01/12/2009 was undertaken. Data from patients with a low eosinophil count (<0.04 10*9/L) were compared to the remainder. Data from patients who were pregnant, post transplant, on continuous i.v. antibiotic therapy or without a full blood count were excluded.
Conclusions: Over a 12 month period there were 411 exacerbations in 185 patients. Eosinopenia was found in 19 exacerbations (4.6 % prevalence). There were no significant differences between the two groups in terms of age, sex, FEV_1 at start, total white cell count, *Pseudomonas* status, diabetes or use of LTOT/NIV. Patients with eosinopenia were no more likely to require in-patient treatment, although there was a trend towards this. No patients with eosinopenia had a positive throat swab for viral PCR. Exacerbations with eosinopaenia had a higher pre-treatment CRP and a longer duration of treatment than controls (Table 1).

Table 1. Summary of Results

	Total no. of exacerbations	Home i.v. treatment	Mean total white cell count pre-treatment (10*9/L)	Mean treatment duration (d)	Mean CRP pre-treatment (mg/L)
Eosinopenia	19	6	13.16 (3.64–26.66)	19 (10–29)	64.8 (5–208)
Controls	382	213	10.74 (2.56–29.01)	15 (4–33)	14.4 (5–304)
p-value		0.05	0.09	0.03*	0.02*

An eosinophil count is a widely available and inexpensive biomarker. Eosinopenia appears to be associated with severity of infection in CF pulmonary exacerbations.