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ANTI-INFLAMMATORY EFFECTS OF FLUTICASONE IN BRONCHIECTASIS

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Bronchiectasis has distinct inflammatory and infective components which have no effective therapy. The underlying inflammation in bronchiectasis, mediated by cytokines, is probably the cause of progressive lung destruction. We have therefore performed this double-blind placebo-controlled study to evaluate the effects of inhaled fluticasone (1mg/day) in steady state bronchiectasis. Twenty four non-asthmatic patients (12F; age±SD 43±11 yrs; FEV_1/FVC: 1.1/1.4) with stable 24h sputum volume, spirometry, and respiratory symptoms were recruited. Twelve patients received inhaled fluticasone via the Accuhaler device whilst the rest placebo. At each visit, symptoms, 24h sputum volume, sputum viscosity and purulence scores, spirometry, quantitative sputum pathogen (*Ps. aeruginosa*, *H. influenzae*, *Strep. pneumoniae*, and *Staphy. aureus*) and commensals counts, and sputum sol phase interleukin (IL) 1, IL8, tumor necrosis factor, and leukotriene (LT) B4 were determined. There was a significant ($p<0.05$) improvement after 4 weeks on: sputum leukocyte density (control 2.7, fluticasone $0.42x10^7$/ml), IL1 (17144, 4009 pg/ml), IL8 (17794, 6913 pg/ml), and LTB4 (3041, 1617 pg/ml). There was no significant difference between the groups on: total sputum pathogen densities, FEV_1, FVC, and 24h sputum volume. The results of this study show, for the first time, that high dose fluticasone is an effective anti-inflammatory agent in stable chronic active bronchiectasis. Longer term follow up studies are indicated to evaluate the impact of anti-inflammatory therapy on the progressive course in bronchiectasis.

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CLINICAL PREDICTORS OF SPUTUM MICROBIOLOGY IN CHRONIC CHINESE BRONCHIECTASIS

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Patients with bronchiectasis suffer from recurrent exacerbations and most of these infective exacerbations are treated with empirically chosen antibiotics. A sound choice of antibiotics can only be made with a detailed understanding of the microbiology. However, little is known of the steady state sputum microbiology in the non-Caucasian populations. Out-patients (n=100; 62F; age 55.1±16.7 yrs; FEV_1/FVC 1.4±0.7/2.1±0.9 l), who had stable respiratory symptoms for >3 weeks, were recruited into this prospective study. Sputum was inoculated onto standard isolation bacterial agars (blood, McConkey, chocolate, bactracin, mannitol, and nalidixic acid & centrimide) and incubated for >24h. Neisseriae, α-haemolytic streptococcus, diptheroids and coagulase -ve staphylococcus were defined as commensals. Daily sputum volume was determined as grades 1-8 for 0-5, 5-10, 10-15, 15-20, 20-30, 30-40, 40-50, 50-100ml respectively. The following were isolated: commensals (n=35), *Pseudomonas aeruginosa* (PA) (33), *Haemophilus influenzae* (10), *Streptococcus pneumoniae* (6), *Staphylococcus aureus* (5), *Branhamella catarrhalis* (2), *Mycobacterium chalonae* (2), Torulopsis species (1), *Ps. maltophilia* (1), *Pasteurella multicida* (1), *Escherichia coli* (1), Acinetobacter species (1), *Myc. avium intracellularae* (1), and Citrobacter species (1). The mean FEV_1/FVC and sputum volume grading were significantly different between the PA and non-PA patient groups ($p<0.05$). FEV_1/FVC (<0.6) and sputum volume grading (>5) independently predicted the isolation of PA from sputum with odds ratios of 3.4 (CI 12.6-9.2) and 5.0 (CI 1.7-14.5) respectively. The results of this study, for the first time identify clinical parameters which predict the presence of PA in sputum, are essential for clinician in the empirical prescription of antibiotics in bronchiectasis.