

## RM-07 Inhaled corticosteroid therapy in bronchiectasis—a 12-month study

Tsang KW, Ho PL, Tan KC, GC Ooi, Ho JC, Tipoe GL, Wu AY, Ip MS, Lam WK, Chan-Yeung M. University Departments of Medicine, Microbiology, Anatomy, and Diagnostic Radiology, University of Hong Kong, Hong Kong SAR.

**Background:** The clinical efficacy of inhaled corticosteroid (ICS) therapy has not been evaluated on patients with bronchiectasis, despite the presence of chronic airway inflammation in this condition. We have, therefore, performed a double-blind randomized study on patients with stable bronchiectasis.

**Methods:** After a baseline follow up of 3 consecutive weekly visits, 86 patients were randomised to receive either fluticasone 500µg BID (n=43, 23F, 57.7±14.35 yr) or matched placebo (n=43, 34F, 59.2±14.16 yr), and reviewed regularly for 52 weeks.

**Findings:** Altogether 35 and 38 patients from the fluticasone and placebo groups completed the study respectively. Compared with placebo, ICS therapy was associated with significantly more patients showing improvement in 24h sputum volume (OR 2.5, 95%CI 1.1-6.0), but not exacerbation frequency, FEV<sub>1</sub>, FVC or sputum purulence score. Significantly more fluticasone patients with *Ps. aeruginosa* infection at baseline had improvement in 24h sputum volume (OR 13.3, 95%CI 1.8-100.1) and exacerbation frequency (OR 13.5, 95%CI 1.8-101.1), compared with their placebo counterparts. Other predictors for improvement in post-treatment 24h sputum volume with fluticasone therapy include baseline 24h sputum volume <30ml (OR 2.7, 95%CI 1.1-6.7), exacerbation frequency ≤2/yr (OR 5.1, 95%CI 1.2-22.7), and sputum purulence score >5 (OR 2.7, 95%CI 1.0-6.9). Both groups of patients had improvement in respiratory symptoms after treatment, but ICS therapy was associated with significantly less patients complaining of cough (p=0.03).

**Interpretation:** Our results show that inhaled corticosteroid therapy, over a 52-week duration, is clinically beneficial to patients with bronchiectasis, particularly those with *Ps. aeruginosa* infection

## RM-08 A quantitative high resolution computed tomography assessment of patients with stable bronchiectasis

GC Ooi, PL Khong, \*M Chan-Yeung, \*JCM Ho, PKS Chan, JCK Lee, \*WK Lam, \*KW Tsang. Departments of Diagnostic Radiology and Medicine, University of Hong Kong, Hong Kong SAR, China.

**PURPOSE:** To evaluate the clinical relevance of HRCT findings using a quantitative HRCT protocol to assess severity of bronchial wall thickening, extent of bronchiectasis, and presence of small airway abnormalities and mosaic pattern.

**MATERIALS AND METHODS:** Sixty Chinese with steady state bronchiectasis underwent thoracic HRCT scan and full lung function tests. Exacerbation frequency/year and 24h-sputum volume were determined. Extent of bronchiectasis, bronchial wall thickening, presence of small airway abnormalities and mosaic attenuation were evaluated in each lobe, including lingula. Differences between sex and smoking status on HRCT, lung function and clinical parameters were tested using either independent sample t-test or Mann-Whitney rank sum test. Spearman's correlation was used to evaluate associations between clinical, lung function and HRCT scores. Multiple regression analyses were performed to determine HRCT parameters that best predict lung function and clinical parameters adjusted for smoking.

**RESULTS:** Exacerbation frequency was associated with bronchial wall thickening (r=0.32, p=0.03); 24h sputum volume with bronchial wall thickening, small airway abnormalities (r=0.30, 0.39, p<0.05), and FEV<sub>1</sub>, FEV<sub>1</sub>/FVC and FEF<sub>25-75</sub> (r=-0.33, -0.29, -0.32; p<0.05). Extent of bronchiectasis, bronchial wall thickening and mosaic attenuation was respectively related to FEV<sub>1</sub> (r=-0.43 to -0.60 p<0.001), FEF<sub>25-75</sub> (r=-0.38 to -0.57; p<0.001), FVC (r=-0.36 to -0.46, p<0.01), and FEV<sub>1</sub>/FVC (r=-0.31 to -0.49, p<0.01). After multiple regression bronchial wall thickening remained a significant determinant of airflow obstruction, while small airway abnormalities remained associated with 24h-sputum volume. Women in general had milder disease than men, but showed more HRCT-functional correlations.

**CONCLUSIONS:** This study has established a link between morphologic HCRT parameters and clinical activity, and emphasised the role of BWT in bronchiectasis.