

RM-09 Inhaled fluticasone therapy improves quality of life in bronchiectasis

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Purpose: Bronchiectasis is a common chronic infective and inflammatory airway disease among the Chinese. St George's Respiratory questionnaire (SGRQ) is a standardized quality of life instrument consisting of 50 items grouped under three components, namely symptoms, activity and impact. Although conventional structural and disease activity markers are important end points for assessment of treatment efficacy, assessment of quality of life parameters is increasingly being recognized as one of the most important outcome measures. We have, therefore, employed our recently validated Hong Kong version of SGRQ(-HK) to assess the effects of inhaled steroid treatment among patients with stable bronchiectasis.

Methods: We have prospectively assessed the SGRQ-HK on 76 stable bronchiectasis patients, who received either fluticasone 500µg BID (FG, n=38, 20F, 57.7±14.6 yr) or matched placebo (PG, n=38, 33F, 58.9±14.2 yr) administered via the Accuhaler device for 24 weeks in a double-blind randomized fashion. SGRQ-HK assessment was performed by the same research assistant who had no knowledge of the treatment protocol. The three domains of SGRQ-HK, namely symptoms, activity and impact scores, as well as the total combined scores, which took account of weighting of each of these components, were calculated for baseline and 24-week.

Results: After 4-week treatment with inhaled steroid therapy, the fluticasone patients had improvement (i.e. lower score) in symptom (baseline median 46.0, 4-week 31.3, $p<0.001$), activity (34.8, 33.5, 0.61), impact (28.8, 24.9, 0.13) and total (33.7, 28.5, 0.01) scores when compared with baseline data. After 24-week treatment with fluticasone, symptom (36.2, $p=0.03$), activity (26.8, 0.04), impact (20.7, 0.003) and total (25.2, 0.003) scores all significantly improved when compared with baseline. In contrast, patients who received placebo treatment did not have significant changes in the aforementioned parameters ($p>0.05$) except there was an improvement of symptom score at 4-week (38.5), when compared with baseline (49.1, $p<0.001$). There were no significant difference in the pre- and post- treatment lung function parameters ($p>0.05$).

Conclusion: We conclude that quality of life parameters improve with inhaled corticosteroid therapy in patients with bronchiectasis. Results of this study support the use of inhaled steroid therapy on these unfortunate patients

RM-10 Air-trapping in beta thalassaemia major (TM)

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Introduction: We aim to describe and quantify HRCT features of the lung in TM patients, determine the incidence and pattern of lung dysfunction and correlate HRCT findings with lung function parameters.

Methods: TM patients above 8 years of age were randomly selected and prospectively evaluated with HRCT (in full inspiration and expiration) and pulmonary function tests (PFT). Presence of focal bronchial and parenchymal lesions and air trapping were recorded. A semi-quantitative air-trapping score (ATS) and lung function parameters were compared. Patients were divided in groups with air trapping (ATS+) and without air trapping (ATS-). Mann-Whitney tests was used to detect any significant differences in PFT indices between ATS+ and ATS-. We performed multiple logistic regression to study with relationship with PFT indices and the presence of air trapping. $P<0.05$ was used to indicate statistical significance.

Results: There were 42 patients aged 9 to 40 years old (mean: 24 years). None were active smokers or asthmatic. Patients were asymptomatic apart from cough in four patients. The predominant finding on HRCT was air trapping, detected in 11 patients (26.2%). One patient had lower lobe bronchiectasis. No parenchymal lesions were found. PFT was normal in four patients (9.5%). Impaired DLCO as the only abnormality was present in 13 patients (33.3%). Twelve patients (28.5%) had restrictive lung disease, of which eight were mild (TLC 70%-79%), three were moderate (TLC 60%-69%) and one was severe (TLC < 60%). Obstructive lung disease was seen in four patients (9.5%) and three patients (7.1%) had a mixed obstructive-restrictive pattern. PFT was suggestive of small airways disease in four patients (9.5%). Using Mann-Whitney test, there were statistically significant differences in the mean values of FEV1, FEF 25-75%, FEF 50%, FEF 75% in the ATS- and ATS+ groups ($p=0.012$, 0.001, 0.021, 0.019 and 0.004 respectively). Using simple logistic regression analysis, there was a statistically significant association between FEV1, FEF 25-75%, FEF 50%, FEF 75% and air trapping ($p=0.02$, 0.007, 0.038, 0.028 respectively). With multiple logistic regression, only FEF 25-75% was significantly associated with air trapping ($p=0.006$, adjusted odds ratio=0.90, 95% lower CI=0.83, 95% upper CI=0.97, adjusted $R^2=0.49$).

Conclusion: TM patients have a varied and mixed pattern of lung dysfunction. Air trapping is the predominant finding on HRCT, suggestive of small airway disease and this is supported by correlation with FEF25-75%. The cause of restrictive lung disease is probably multifactorial and not limited to interstitial lung disease. The relationship of iron overload with small airway disease is yet to be determined.