Abstract:

Objective: Physical activity is an important and frequent trigger of airways obstruction in asthmatic children. We aimed to compare the efficacies of 50 μg salmeterol twice daily and 2 mg SCG four times daily with respect to protection from exercise induced bronchoconstriction (EIB).

Methods: Twenty seven children and adolescents aged 4 to 16 years with mild or moderate exercise induced asthma (FEV1 70% to 90% predicted) were admitted to the study. Exercise challenge was performed on a treadmill using a predefined protocol in order to produce 10 minutes of exercise at near-maximum targets. The trial had a randomised, cross-over design comprising a 3-day run-in period and two 7-day treatment periods, separated by a one-week washout period.

Results: The mean protective efficacy of salmeterol was larger than that of SCG. A difference between treatments of 39.7% (95% CI, -0.8 to 68.9%) in favour of salmeterol was calculated using a Hodges-Lehmann-estimate. The maximum post-challenge fall in FEV1 was significantly lower (p<0.001) after salmeterol than after SCG (-5.6 +/- 6.4% vs. -12.1 +/- 9.3%, respectively). In addition, salmeterol improved base-line lung function to a greater degree than SCG. FEV1 increased by 0.4 l/sec after salmeterol, whereas no improvement was observed after SCG.

Conclusions: A one-week treatment with salmeterol 50μg b.i.d in asthmatic children and
adolescents provided better protection against EIB and improved baseline lung function as compared to SCG four times daily.