Dear Editor,

As part of a study to validate a new assessment tool (three-minute respiratory exercise test, 3MRET) \(^1\), 14 asthmatic subjects [mean (95%): age, 39 (27-50) yrs, \(\text{FEV}_1\), 63 (57-68)% predicted normal; male, 42] were randomized to receiving either nebulised 10mg bircanyl (active) or normal saline (placebo), in a crossover, double-blind study. The mean percentage (95% CI) \(\text{FEV}_1\) change after nebulised active and placebo agents were +23 (+8 to +38) and 0 (-6 to +5) respectively.

Subjects were asked as to whether they were less breathless (score=1), more breathless (score=2) or did not sense any change or were not sure (score=3) after each nebulisation. All 14 subjects reported a score of 1 when administered active agent. Only 2 subjects correctly scored 3 when administered placebo while the rest reported a score of 1. None of the subjects reported a score of 2.

When Perception of Dyspnoea (POD) index based on 3MRET \(^1\) was used, 9 subjects correctly recorded a reduction of POD when administered active agent and 10 subjects correctly recorded an equivocal POD index (taken arbitrarily as change of <13, a figure taken from the lower bound of 95% confidence level of the mean increase). Based on these figures, the subjective sense of change in breathlessness has a sensitivity of 100% and a specificity of only 16%, while POD index has a sensitivity of 60% and a specificity of 77%.

Taken together, the findings highlighted the unreliability of subjective perception in changes of breathlessness among asthmatic subjects \(^2\) \(^3\). Symptoms limiting exercise test like 3MRET that is based on maximal repetitive inspiratory efforts capable of an individual within 3 minutes \(^1\) may have a role in improving the detection of changes in POD. The implication on POD is huge since asthma management is primarily symptom-directed. The ability to improve the awareness of breathlessness or changes in breathlessness, by patients and clinicians will represent an important milestone in the management of asthma.

References

1. Incentive spirometry as a means to score breathlessness. Li-Cher LOH, Pek-Ngor TEH, Sree RAMAN, Pillai Vijayasingham, Tarmizi Thayaparan (Original article submitted to The Malaysian Journal of Medical Sciences)