predicting and preventing re-admissions in COPD — what is the real cost?

Background Acute exacerbations of chronic obstructive pulmonary disease (AECOPD) are associated with significant morbidity, mortality, and high resource utilisation. More accurate prediction of prognosis following hospital discharge may help optimise clinical management and individualise post-discharge care. Physical performance is potentially amenable to treatment and may help stratify patients at risk of early mortality. In community-dwelling older adults, the 4-metre gait speed (4MGS) is a well-established performance measure and a consistent predictor of mortality. We hypothesised that 4MGS at discharge predicts 1 year mortality in patients hospitalised with AECOPD.

Methods 213 patients admitted to one hospital with a primary diagnosis of AECOPD were recruited prospectively. 4MGS was measured on the day of hospital discharge. Data on all-cause mortality at one year were obtained from the patient care summaries at many hostels.

Results Baseline characteristics: 111 males/102 females; mean (SD) age 72 (11) years, 4MGS 0.61 ms⁻¹ (0.26) and median (IQR) FEV₁% predicted 35 (26, 49). 35 patients (16%) were not alive at 1 year. 4MGS at hospital discharge was significantly lower in these patients compared to survivors (mean (SD) 0.47 (0.24) vs 0.63 (0.26) ms⁻¹; p < 0.001). All-cause mortality at 1 year increased with decreasing quartiles of 4MGS (Q4 4%; Q3 9%; Q2 21%; Q1 32%; p < 0.001). Multivariate logistic regression demonstrated a significant trend in the age adjusted odds of death with decreasing quartiles of gait speed (p < 0.001) (see Table 1). Increased odds of death at 1 year were seen with each 0.1 ms⁻¹ decline in gait speed (OR 1.26 (1.06 to 1.49), p = 0.008).

Conclusion The 4MGS measured at discharge predicts 1 year mortality in patients hospitalised with acute exacerbation of COPD. Given the simplicity of the 4MGS, it is a potentially useful tool to risk stratify patients with COPD in the acute setting and tailor post discharge care.