

Publication

Adrenomedullin refines mortality prediction by the BODE index in COPD: the "BODE-A" index

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The BODE (body mass index, airflow obstruction, dyspnoea, exercise capacity) index is well-validated for mortality prediction in chronic obstructive pulmonary disease (COPD). Concentrations of plasma pro-adrenomedullin, a surrogate for mature adrenomedullin, independently predicted 2-year mortality among inpatients with COPD exacerbation. We compared accuracy of initial pro-adrenomedullin level, BODE and BODE components, alone or combined, in predicting 1-year or 2-year all-cause mortality in a multicentre, multinational observational cohort with stable, moderate to very severe COPD. Pro-adrenomedullin was significantly associated ($p < 0.001$) with 1-year mortality (4.7%) and 2-year mortality (7.8%) and comparably predictive to BODE regarding both (C statistics 0.691 versus 0.745 and 0.635 versus 0.679, respectively). Relative to using BODE alone, adding pro-adrenomedullin significantly improved 1-year and 2-year mortality prognostication (C statistics 0.750 and 0.818, respectively; both $p < 0.001$). Pro-adrenomedullin plus BOD was more predictive than the original BODE including 6-min walk distance. In multivariable analysis, pro-adrenomedullin (likelihood ratio Chi-squared 13.0, $p < 0.001$), body mass index (8.5, $p = 0.004$) and 6-min walk distance (7.5, $p = 0.006$) independently foretold 2-year survival, but modified Medical Research Council dyspnoea score (2.2, $p = 0.14$) and forced expiratory volume in 1 s % predicted (0.3, $p = 0.60$) did not. Pro-adrenomedullin plus BODE better predicts mortality in COPD patients than does BODE alone; pro-adrenomedullin may substitute for 6-min walk distance in BODE when 6-min walk testing is unavailable.

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