Predicting Primary Care Patients who Are at Risk of Dying within 6-12 Months: A Retrospective Case-control General Practice Chart Analysis

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Background: Effective end of life care requires early recognition of the likelihood of dying within months. Screening of general practice popula- tions has not been successful to date. An RCT of screening GP patients ⩾70 with the Surprise Question plus a case finding tool (SPICT) tool vs intuition, found no difference between the two, and high false positive rates. Therefore, a need exists for reliable identification of malignant and non-malignant patients at risk of dying in 6-12 months.

Aims:

1. To identify variables which have the greatest value as predictors of dying within 12 months.
2. To develop and validate a nomogram to predict the probability of death within 6-12 months.

Study design and methods: Case-control study using general practice records. Cases were patients age ⩾70 who died (n=215). Controls were

patients frequency matched for age and sex who were alive. All had clini- cal records for ⩾18 months before death or chart review. Predictors of interest were items in the SPICT (2012 version).
Method of statistical analysis: Multiple logistic regression was used to identify predictors of death. A nomogram was developed to calcu- late probability of dying using significant predictors and internally validated.

Results and interpretation: Of the 21 predictors evaluated, the following were statistically significant: deteriorating performance, weight loss, per- sistent symptoms, palliative care or treatment withdrawal being sought, indicators of frailty (needs assistance with activities of daily living), frac- tured hip or frequent falls, neurological deterioration, COPD, lung fibrosis and eGFR < 30ml/min/1.73m^2 with deteriorating health. The nomogram had a predictive accuracy of 78%, sensitivity 67%, specificity 87%.

End of life can be predicted in elderly primary care populations. As many of the elements require an assessment by the clinician, automatic records screening will be problematic. External validation of our nomogram is required prior to widespread use.