RESEARCH BRIEF

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Prognostic model for predicting mortality: Facilitating palliative care referrals for patients diagnosed with advanced dementia in acute care

Research article: Predicting mortality in patients diagnosed with advanced dementia presenting at an acute care hospital: the PROgnostic Model for Advanced DEmentia (PRO-MADE). *Published in BMC Geriatrics in April 2023. Click here to view the published article online*.

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KEY FINDINGS

1. Predictors of one-year mortality from all causes in patients diagnosed with advanced dementia were old age, male gender, functional dependency, comorbidity burden, abnormal urea and albumin levels, as well as the presence of medical conditions such as pneumonia, pressure ulcers and dysphagia.

2. The developed prognostic model, PRO-MADE, showed good discrimination (ability to differentiate between mortality outcomes among patients) and calibration (agreement between predicted and observed mortality risk) performance.

3. There are differences between prognostic models in acute care and long-term care settings.

IMPLICATIONS AND SIGNIFICANCE OF FINDINGS

1. The developed prognostic model can complement clinicians' judgement to identify patients with advanced dementia who are at high risk of short-term mortality.

2. Accurate prognostication can better aid high-risk patients with advanced dementia to receive timely palliative care. This helps to minimise unnecessary suffering, enable important conversations between patients and their caregivers and respects patients' preferences for their care plans.

3. Selection of the probability threshold for the application of the prognostic model should consider the availability of healthcare resources and implications on treatment and care plans.

4. A prospective validation study can further validate the usefulness of the prognostic model in clinical settings.

BACKGROUND

Dementia represents an escalating and multifaceted challenge within society amidst the rapidly ageing population worldwide. This progressive and irreversible condition impairs both cognitive and physical functions, and ultimately robs those affected of their independence. Given the increasing prevalence of dementia, caring for this population group poses a significant strain on individuals, families and healthcare systems.

Patients with dementia and their caregivers would benefit from palliative care due to the terminal nature of dementia and complex care requirements. Such care services would assist in enhancing patients' quality of life and relieving their symptom burden. While most patients with advanced dementia die in hospital, many do not receive palliative care promptly. Due to the considerable number of patients with dementia being cared for in acute care settings, accurate prognostication would aid in identifying high-risk individuals to receive timely palliative care.

FOCUS OF PROJECT

The study developed, and both internally and externally validated, a prognostic model to predict one-year-all-cause mortality among patients with advanced dementia in the acute care setting, using routinely available data from electronic medical records. The developed predictive algorithm contributes to patient care in aiding clinicians' decision-making to facilitate timely referrals to palliative care for this population group.

PARTICIPANTS

The study analysis sample consisted of patients diagnosed with advanced dementia in acute care settings. A two-step strategy, involving diagnostic codes and functional assessment tools, was used to identify the study sample from a pool of patients admitted to Tan Tock Seng Hospital. Two patient cohorts were sampled for development and external validation of the prognostic model.

STUDY DESIGN

This study adopted a retrospective cohort study design.

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