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HEALTH-RELATED QUALITY OF LIFE AS A PREDICTOR OF 10-YEAR MORTALITY IN OLDER PATIENTS WITH EARLY STAGE BREAST CANCER

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Introduction: Health-related quality of life (HRQOL) is emerging not only as an important outcome in survivorship care but also as a factor thought to influence mortality. However, prognostic models that include HRQOL alongside traditional breast cancer (BC) prognostic measures are lacking.
Objectives: Our objective was to develop a 10-year mortality risk score based on selected treatment and HRQOL variables.
Methods: We studied 660 women ≥65-years old diagnosed with stage I-IIIA primary breast cancer in years 1997-1999. Over 10 years, medical and psychosocial data were collected from interviews, medical records, and death indexes. Treatment variables included receipt of definitive locoregional surgery +/- radiation, chemotherapy, and tamoxifen. HRQOL variables included physical function [10-item Physical Function Index (PFI-10) from the Medical Outcomes Study Short Form-36 (MOS SF-36)]; mental health [5-item Mental Health Index (MHI-5) from the MOS SF-36]; and social support [8-item modified MOS Social Support Scale (mMOS-SSS)]. We used penalized logistic regression models to develop a 10-year mortality risk score. We then assessed its discrimination (c-statistic) and calibration (observed versus predicted mortality using the Hosmer-Lemeshow (HL) test).
Results: 230 of 660 women (34.8%) died though 10-years of follow-up. Mental health and physical function had strong independent associations with mortality in adjusted analyses (women with high MHI-5: OR 0.57, 95% CI 0.39, 0.85; women with high PFI-10: OR 0.63, 95% CI 0.43, 0.92). The c-statistic of a risk score using only age, number of comorbidities, stage of BC, and BC treatment was 0.71. The c-statistic increased to 0.74 with the addition of HRQOL measures and showed good calibration (p=0.72 from HL test).
Conclusion: HRQOL is independently associated with 10-year mortality in older patients with early stage breast cancer and adds predictive ability with good discrimination and calibration to age, comorbidity, stage of BC, and BC treatment. These findings suggest that interventions to improve mental health, physical function, and social support might benefit not only a patient's HRQOL but also her survival.

Disclosure of Interest: None Declared

Keywords: Early stage breast cancer, Health-related quality of life, Prognosis, Survivorship