Is It Possible to Predict the Survival Of Outpatients With Advanced Cancer Referred to Palliative Care?

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BACKGROUND: Currently, it is essential to have a predictive clinical tool for outpatients with advanced cancer who are referred early to palliative care. The survival information is important for patients, families as well as health professionals in making decisions to prevent unnecessary treatments. Recently, we developed a practice tool called Barretos Prognostic Nomogram (NPB) to assess the probability of survival among outpatients with advanced cancer. This tool includes five variables: gender, Karnofsky Performance Status (KPS), serum albumin, serum leukocyte count and presence of distant metastasis. The aims of this study were to validate the NPB in predicting survival of outpatients with advanced cancer at the time of referral to palliative care and to compare this tool with other prognostic available models in the literature: Palliative Prognostic Score (D-PAP), Spanish Nomogram Prognosis, Chow's number of risk factors (NFRC), modified Glasgow Prognostic Score (mGPS), and Palliative Prognostic Index (PPI).

HYPOTHESIS: NPB provides good calibration and discrimination for prediction of survival in the outpatient setting. As a secondary hypothesis, it should have similar or better performance compared to other available prediction tools.

METHODS: This was a prospective observational study conducted at Barretos Cancer Hospital which included 276 patients. All the participants answered a sociodemographic questionnaire and a survey which included questions from five instruments: D-PAP, Spanish Nomogram Prognosis, NFRC, mGPS, and the PPI. Also, the following assessments were administered: the Edmonton Symptom Assessment System (ESAS); the Confusion Assessment Scale (CAM), for identification of delirium, the Eastern Cooperative Oncology Group Scale-Performance Status (ECOG-PS) and KPS. In addition, we analyzed results from laboratory tests. Patients were interviewed once and follow-up data were collected through medical records until the date of death or last evaluation in the study.

RESULTS: The NPB showed adequate calibration and discrimination. According to the Hosmer-Lemeshow test, values were considered adequate: 30-days, p=0.538; 90 days, p=0.580; 180 days, p=0.756. In 30 days, the NPB showed a sensitivity of 78.4% and specificity of 74.8%; in 90 days, 66.3% and 65.2% and in 180 days 66.6% and 69.3% respectively. In comparative terms, at 30 days, NPB was more accurate than the NFRC (p <0.001) and mGPS tool (p = 0.001). At 90 and 180 days, NPB continued to be more accurate than mGPS (p = 0.0010 in 90 days, p = 0.0002 at 180 days), but only higher than NFRC at 90 days (p = 0.0088). The 30-day AUC (area under the curve) of the NPB was 0.84 (CI 95%: 0.78-0.90) and the C index was 0.71. Other prognostic tools performed similarly: D-PAP (30-day AUC: 0.86, CI 95%: 0.80-0.91; C index: 0.73), PPI (30-day AUC: 0.81, CI 95%: 0.75-0.88; C index: 0.70) and Spanish Nomogram Prognosis (30-day AUC: 0.81, CI 95%: 0.74-0.88; C index: 0.72).

CONCLUSION: The NPB had good calibration and discrimination, and performed well against other validated prognostic models. It may be useful for survival prediction in the outpatient palliative care setting.