

Abstract

BACKGROUND: The Glass model developed in 2003 uses prognostic factors for noncastrate metastatic prostate cancer (NCMPC) to define subgroups with good, intermediate, and poor prognosis.

OBJECTIVE: To validate NCMPC risk groups in a more recently diagnosed population and to develop a more sensitive prognostic model.

DESIGN, SETTING, AND PARTICIPANTS: NCMPC patients were randomized to receive continuous androgen deprivation therapy (ADT) with or without docetaxel in the GETUG-15 phase 3 trial. Potential prognostic factors were recorded: age, performance status, Gleason score, hemoglobin (Hb), prostate-specific antigen, alkaline phosphatase (ALP), lactate dehydrogenase (LDH), metastatic localization, body mass index, and pain.

OUTCOME MEASUREMENTS AND STATISTICAL ANALYSIS: These factors were used to develop a new prognostic model using a recursive partitioning method. Before analysis, the data were split into learning and validation sets. The outcome was overall survival (OS).

RESULTS AND LIMITATIONS: For the 385 patients included, those with good (49%), intermediate (29%), and poor (22%) prognosis had median OS of 69.0, 46.5 and 36.6 mo (p=0.001), and 5-yr survival estimates of 60.7%, 39.4%, and 32.1%, respectively (p=0.001). The most discriminatory variables in univariate analysis were ALP, pain intensity, Hb, LDH, and bone metastases. ALP was the strongest prognostic factor in discriminating patients with good or poor prognosis. In the learning set, median OS in patients with normal and abnormal ALP was 69.1 and 33.6 mo, and 5-yr survival estimates were 62.1% and 23.2%, respectively. The hazard ratio for ALP was 3.11 and 3.13 in the learning and validation sets, respectively. The discriminatory ability of ALP (concordance [C] index 0.64, 95% confidence interval [CI] 0.58-0.71) was superior to that of the Glass risk model (C-index 0.59, 95% CI 0.52-0.66). The study limitations include the limited number of patients and low values for the C-index.

CONCLUSION: A new and simple prognostic model was developed for patients with NCMPC, underlying the role of normal or abnormal ALP.

PATIENT SUMMARY: We analyzed clinical and biological factors that could affect overall survival in noncastrate metastatic prostate cancer. We showed that normal or abnormal alkaline phosphatase at baseline might be useful in predicting survival.
Prognostic Factors for Survival in Noncastrate Metastatic Prostate Cancer

Keywords: Alkaline phosphatase; Docetaxel; Metastatic; Noncastrate; Prognostic factors; Prostate cancer

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