Estimating 12-weeks life expectancy in metastatic gastric cancer (mGC) patients (pts) candidates for second-line treatment: The "Gastric Life" nomogram

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Background: The estimation of life expectancy of mGC pts in the second-line setting may be biased by the absence of objective prognostic tools to be used for enrollment in clinical trials and for decision making in the daily practice. The availability of evidence-based second-line treatment options highlights the need of nomograms/prognostic scores which may assist clinicians in refining pts’ clinical selection in the salvage setting. The aim of this study was to build a nomogram for predicting the individual 12-weeks overall survival (OS) of mGC pts starting a second-line treatment.

Methods: At 26 Italian Institutions, 320 mGC patients receiving second-line chemotherapy, ramucirumab or paclitaxel/ramucirumab were used as developing set. Putative prognostic variables (age, gender, ECOG PS, T resection, Lauren’s histotype, primary anatomic site, synchronous presentation, number and location of metastatic sites, PFS and response to 1-line, LDH, neutrophils/lymphocytes ratio) were selected using a random forest model and included in a Cox multivariable model from which the nomogram was derived. The nomogram performance was derived by means of calibration plot and discriminative ability (Harrell’s C index).

Results: Three variables were selected and included in the nomogram: ECOG PS (p < 0.0001), neutrophils/lymphocytes ratio (p < 0.0001) and peritoneal involvement (p = 0.0085). The model discriminative ability index was 0.858. The internal calibration plot did not show significant differences between observed and predicted 12-weeks OS probabilities. External validation analysis is currently ongoing.

Conclusions: Our nomogram may be a useful tool to predict 12-weeks life expectancy in mGC pts candidates for second-line therapy. Based on 3 easy-to-collect variables, the “Gastric Life” nomogram may improve second-line pts’ selection and assist researchers for the enrollment in clinical trials.

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