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Introduction: Surgery is the mainstay of curative-intent treatment for stage I–III GCs. However, in the Western world, 40–60% of patients (pts) relapse after surgical resection and the absolute survival benefit of adjunctive modalities is limited to 6–14% at 5 years. Thus, there is an unmet need for reliable prognosticators capable of guiding treatment decision in daily practice and risk-stratification in clinical trials to maximize the risk-benefit ratio of available approaches.

Methods: Electronic medical records of pts undergoing surgical resection for T2–4 and/ or lymph node-positive GCs from January, 2010 to July 31, 2018, at the Modena Cancer Centre were reviewed. Post-surgery clinical, pathologic and biochemical variables of interest were retrieved. Laboratory variables initially recorded as continuous parameters were later dichotomized using the ROC analysis. The impact of the collected covariates on the risk of recurrence and on survival was evaluated through logistic regression and Cox proportional hazards model, respectively.

Results: A total of 207 GCs underwent curative resection at our Institution over the study period and 157 pts had all available data for the analysis. Among the latter, 31% of pts were female and the median age at diagnosis was 74 years (range 32–94). 93% of pts had a non-cardia GC and 52% presented with stage I–II disease. 47% of pts received adjuvant chemotherapy. The median follow-up time was 55 months (IC95% 34–89). Disease recurrence was recorded in 36% of pts. Median relapse-free survival (RFS) and overall survival (OS) were 28 and 33 months, respectively. The following parameters were linked to an increased risk of relapse after surgical resection: vascular invasion (OR 4.47, P 0.019 (OR 9.48; P < 0.0001), eosinophil count > 110/mmc (OR 2.92; P = 0.013). At the multivariate analysis for RFS, ECOG PS ≥ 1, vascular invasion and lymph node ratio > 0.19 were shown to be independent negative prognostic factors. With regards to the impact on OS, ECOG PS ≥ 1 (P 0.19 (P = 0.0046) and platelet-to-lymphocyte ratio > 124 (P = 0.0293) were significantly associated with a poorer outcome.

Conclusion: Our study confirms the prognostic value of previously described clinico-pathologic factors and identifies eosinophils and platelet-to-lymphocyte ratio as independent predictors of outcome in a Western cohort of resected GCs from a tertiary cancer centre. The promising role of immune-inflammatory markers deserves prospective validation in larger studies in order to improve the accuracy of currently available prediction tools.