Effect of Tumor Grade on Neoadjuvant Treatment Outcome in Esophageal Cancer

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PURPOSE/OBJECTIVES

• Tumor grade has historically been incorporated into the assessment of prognosis in patients with esophageal cancer based on an international study involving patients with no preoperative therapy. ¹
• However, no study has been performed to assess tumor grade and its effect on prognosis in patients receiving neoadjuvant treatment for esophageal cancer.
• In this study, we report our single institutional experience to evaluate the effect of histologic grade on patients treated with neoadjuvant therapy for esophageal cancer.

MATERIALS AND METHODS

• IRB approved retrospective query of 1200 esophageal cancer (EC) patients revealed 492 patients with initial biopsy showing a clear pathologic grade before surgery. Of those 492 patients, 425 were treated with neoadjuvant therapy consisting of concurrent chemoradiation (CRT); 203 of those patients had grade 1 or 3 disease.
• Patients were assessed for tumor grade, demographics, stage, neoadjuvant therapy, resection type, and survival.
• Chi-square analysis and Kaplan-Meier curves were used to determine patient survival as a function of tumor grade.
• The primary endpoints were surgical margins, treatment response, recurrence, and survival time

RESULTS

• The median age of the cohort was 63.8 years with a white (93.9%) and male (84.0%) predominance.
• Of the 492 patients who had a clearly defined tumor grade of 1, 2, or 3 on initial staging, 425 of them had neoadjuvant therapy, including 203 who had grade 1 or 3.
• There was a significant association between tumor grade and stage (P=0.004).
• There was a significant association between tumor grade and neoadjuvant treatment (P=0.000).
• There was no significant difference between treatment response (P=0.551), negative margin resection (P=0.252), recurrence (P=0.307), and Overall Survival time (P=0.232) between patients with grade 1 disease (low grade) or people with grade 3 disease (high grade).

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Figure 1: Kaplan-Meier curve comparing Overall Survival between patients with Grade 1 (low grade) and Grade 3 (high grade) disease

DISCUSSION

• Based on our data, after neoadjuvant therapy, there is no significant association between low and high tumor grade compared with treatment response, negative margin resection, recurrence, and overall survival time.
• Because there is no significant association between prognostic indicators and tumor grade after neoadjuvant therapy, these findings suggest tumor grade may not be predictive of prognosis in the preoperative setting.
• Although some data suggests improved outcomes with induction chemotherapy followed by CRT, our findings suggest equivalent outcomes with concurrent CRT for both high and low grade tumors and that prognosis is not worse for high grade EC.

CONCLUSIONS

• After neoadjuvant therapy consisting of concurrent CRT, there is no significant association between pathologic tumor grade and treatment response, surgical margins, recurrence, or survival time.
• Further evaluation is warranted for prospective validation.

REFERENCES