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Tumour Regression Grading (TRG) in Relation to the PFS and OS in Gastroesophageal Carcinoma

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Abstract

Tumour Regressive Grade (TRG), margins and histopathology grade are the way to reach a strategy for addition of adjuvant chemotherapy or not, however lack of solid date about the exact benefit of the sole adjuvant therapy makes it very challenging, so the patients' decisions are very considerable in such cases, especially with high risk features; high TRG, positive margins and poor performance status, as the benefits of pre surgical chemotherapy may not be so clear. High TRG score and borderline performance status may be factors behind a decision to stop treatment after the surgery.

Keywords: TRG • Gastroesophageal carcinoma • FLOT

Introduction

TRG stands for Tumor Regression Grade, which is a histopathological grading system used to evaluate the extent of tumor response to neoadjuvant therapy (chemotherapy and/or radiation therapy) in gastric cancer. The TRG system is based on the degree of residual tumor cells and fibrosis in the resected tumor specimen after neoadjuvant therapy. The TRG system ranges from TRG 0 (complete regression) to TRG 3 (minimal or no regression). TRG 0 indicates complete disappearance of viable tumor cells, while TRG 3 indicates no evidence of tumor regression. The TRG system is used to guide treatment decisions and is also a prognostic factor for patient outcome.

It is often a challenge to counsel oncology patients after recovery from major surgery for gastroesophageal adenocarcinoma. Despite having clear recommendations indicating the effectiveness of perioperative chemotherapy (FLOT)for 4 cycles before to surgery followed by additional 4 cycles after surgery [1], the usefulness of post-surgical chemotherapy alone is still not well established [2].

Design of the Study

We collected data from our medical oncology charts in ELHT; 61 patients received adjuvant chemotherapy FLOT after surgical management for gastroesophageal adenocarcinoma during the last four years; post-operative pathology reports reviewed included TRG score and radiology review; Overall survival and Progression-Free Survival (PFS) were computed.

Results

In the groups with TRG scores of 1, 2 and 3, there was no mortality;

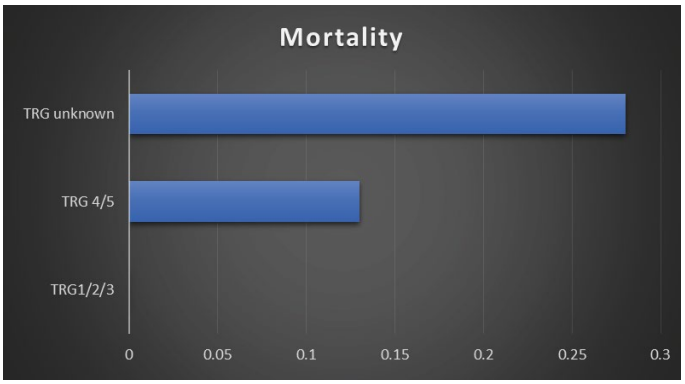

Figure 1. TRG scores and mortality groups.

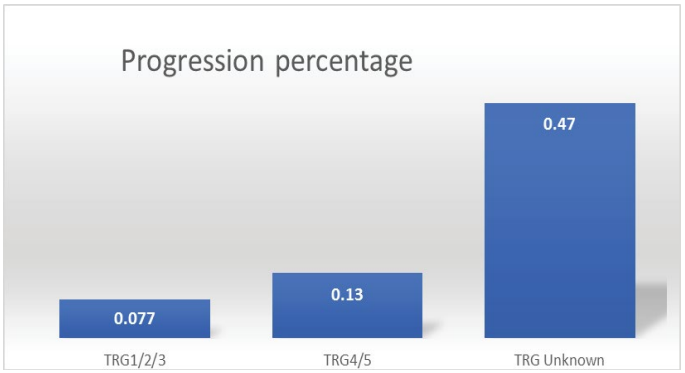

Figure 2. TRG scores and progression percentage.

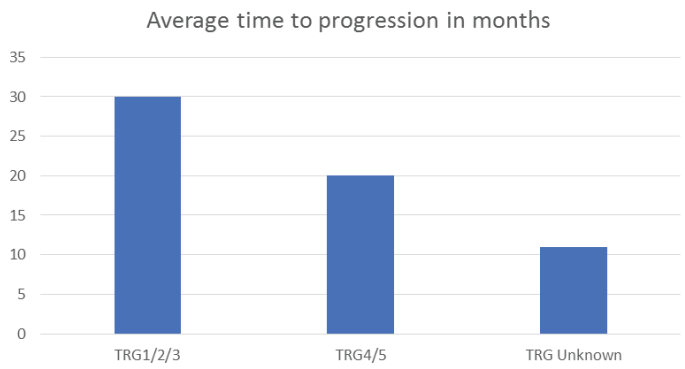

Figure 3. TRG scores and the average time to progression in months.

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however, in the groups with TRG scores of 4 and 5, there was 14% mortality. In the group with an unknown TRG score, the death rate was 28% (Figure 1). In our analysis, we found that the progression rate is higher in the se-cond group (TRG 4/5) than the first group (TRG 1/2/3) as shown in Figure 2.

In the first group, the average time to advancement is 30 months, whereas it is 20 months in the second group and 11 months if the TRG score is unknown (Figure 3).

Discussion

Although a small sample of patients was examined for a short length of time, this research showed that we may base our choice on the TRG score, or that it will at least assist us in determining a strategy for the future following surgery.

A design for a randomised clinical trial may be useful for determining the need of adjuvant chemotherapy in the treatment of gastric and oesophageal cancer.

Tumour Regression Grade (TRG) is a descriptive measurement defined as a histological response to neoadjuvant therapy and has shown prognostic value for digestive system tumours [3,4].

Usually, we do not build our plan for adjuvant chemotherapy in Gastro oesophageal adenocarcinoma (T2N0 and above) based on TRG score, however delivering the post-operative data to the patient and discussing the plan of management, risk of disease recurrence and prognosis is very challenging especially with high TRG score (more than 3) with or without positive margins.

Further larger studies are strongly recommended to evaluate the exact benefits of adjuvant chemotherapy solely after the neoadjuvant chemotherapy, especially with high TRG scores which carry higher risk of disease progression in a shoer period of time.

Positive margins (R1) are a considerable addition to the poor prognosis as well.

Conclusion

Finally, clear and overt discussion with patients about the post-operative data including the TRG, margins and histopathology grade is the way to reach a strategy for addition of adjuvant chemotherapy or not. However, lack of solid date about the exact benefit makes it very challenging, so the patients' decisions are very considerable, especially with high risk features; high TRG, positive margins and poor performance status, as the benefits of pre surgical chemotherapy may not be clear.

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