

Title: Impact Of Induction Chemotherapy On Dysphagia In Patients With Esophageal Cancer

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Abstract

Introduction

Dysphagia is a hallmark symptom in patients with esophageal and gastroesophageal junction cancers and can negatively impact nutritional status, psychological well-being, and overall prognosis. While some studies suggest neoadjuvant therapy (NAT) in the form of systemic chemotherapy or chemoradiation (CRT) can relieve dysphagia, others report worsened symptoms post treatment. We aimed to investigate the comparative efficacy of induction chemotherapy (IC) followed by CRT versus CRT alone in alleviating dysphagia and the need for additional nutrition-centric interventions such as esophageal stents and feeding jejunostomies.

Methods

We performed an IRB approved retrospective cohort study of adult patients with biopsy-proven esophageal cancer who underwent NAT followed by definitive esophagectomy at the University of Colorado Cancer Center between 2007 and 2023. Dysphagia symptoms were assigned a score (0 (no dysphagia), 1 (dysphagia to solids), 2 (dysphagia to soft solids), 3 (dysphagia to solids and liquids), and 4 (inability to swallow saliva)) according to the standardized Mellow and Pinkas (M&P) scale. Dysphagia was assessed after IC for those receiving IC+CRT and after CRT for those receiving CRT alone. Statistical analysis included Wilcoxon signed-ranked test.

Results

A total of 234 patients met inclusion criteria. Among the 76 patients who received IC+CRT, 60 (79%) reported dysphagia prior to any preoperative treatment with a mean M&P score of 1.38, which significantly decreased to 0.70 following IC ($p < 0.001$). This reduction in M&P score for the IC+CRT group was not significantly different from the CRT alone group ($p = 0.26$). FOLFOX and FLOT were the primary chemotherapy regimens in the IC+CRT cohort and resulted in comparable reductions in M&P scores. No esophageal stents were placed during the preoperative period and the rates of feeding tube placement due to dysphagia prior to esophagectomy were similar between the two groups (7.9% for IC+CRT group and 6.3% for CRT).

Conclusions

Dysphagia improves substantially following IC in patients with resectable esophageal cancer, but not significantly more than with CRT alone. Similar rates of feeding tube placement and improvement in M&P scores after NAT suggest IC confers a similar advantage in attenuating dysphagia as CRT.

Table 1. Mellow and Pinkas score reductions based on treatment arm, histologic diagnosis, and tumor location

	# of patients	Mellow and Pinkas score reduction	p-value
Treatment arm			
IC + CRT	60	-0.68	0.26
CRT	110	-0.48	
Histologic diagnosis (all 3 treatment arms of IC+CRT, CRT only, & chemo only)			
Adenocarcinoma	167	-0.59	0.14
Squamous cell carcinoma	12	0.00	
Tumor location (all 3 treatment arms of IC+CRT, CRT only, & chemo only)			
True esophagus	28	-0.54	0.30
GEJ	151	-0.55	