Is There a Difference in Pathologic Response to Neoadjuvant Therapy Based on Chemotherapy Regimen in Esophageal Cancer?

Shankar Logarajah MD, Prashan Jeyarajah, Michael Jureller MD, Maitham Moslim MD, Edward Cho MD, Houssam Osman MD, D. Rohan Jeyarajah, MD

TCU SCHOOL of MEDICINE

Methodist HEALTH SYSTEM

INTRODUCTION

- Neoadjuvant chemoradiotherapy is the mainstay of treatment for locally advanced esophageal cancer.
- CALGB 9781 trial established cisplatin and 5-flourouracil with radiotherapy while the CROSS trial established paclitaxel, carboplatin.
- There has been little data looking at the degree of pathologic response to these two treatment regimens. This study aims to look at this.

METHODS

- Retrospective chart review at a single institution of patients who underwent esophagectomies between 2012-2020
- Patients stratified into those who received neoadjuvant chemoradiotherapy with either Cisplatin and 5-Flourouracil or Carboplatin and paclitaxel. Demographics and oncologic outcomes collected
- X^2 and students t-tests between the two groups was performed with a p value of < 0.05 considered statistically significant.

Characteristics of patients undergoing NAT for esophageal cancer

Variables	Carboplatin and Paclitaxel (n = 74)	Cisplatin & 5-FU (n= 8)	
Age (years, range, mean)	42-85 (63)	57-87 (69)	p = 0.075
Gender			
Female	6 (8.1%)	1 (14.2%)	
Male	68 (91.8%)	7 (87.5%)	p = 0.673
Tumor type			
Adenocarcinoma	67 (90.5%)	4 (50%)	p < 0.001
SCC	7 (9.5%)	4 (50%)	
Clinical Stage			
II	10 (13.5%)	3 (37.5%)	
III	61 (82.4%)	5 (62.5%)	p = 0.145
IVA	2 (2.7%)	0 (0.0%)	
X	1 (1.3%)	0 (0.0%)	
Chemotherapy Duration (weeks) Mean, std dev.	5.7 (2.3)	5.7 (0.4)	p = 0.972
Radiation Duration (weeks) Mean, std dev	6 (2.5)	5.5 (0.9)	p = 0.610
Type of surgery			
Open	17 (23%)	3 (37.5%)	
Laparoscopic	13 (17.6%)	2 (25%)	p = 0.484
Robotic	44 (59.4%)	3 (37.5%)	
Margin status			
R0	63 (85.1%)	7 (87.5%)	p = 0.857
R1	11 (14.9%)	1 (12.5%)	
Pathological stage (yp)			
I	28 (37.8%)	5 (62.5%)	
II	11 (14.9%)	2 (25%)	
IIIA	7 (9.5%)	0 (0.0%)	p = 0.433
IIIB	19 (25.7%)	1 (12.5%)	
IVA	9 (12.2%)	0 (0.0%)	
Modified Ryan Score			
0	12 (16.2%)	2 (25%)	
1	22 (29.7%)	2 (25%)	
2	29 (39.2%)	2 (25%)	p = 0.745
3	11 (14.9%)	2 (25%)	

Table 1

RESULTS

- 82 patients were identified between 2012-2020 –
- 74 (90.2%) received carboplatin and paclitaxel while 8 (9.8%) received 5-flourouracil and carboplatin.
- There was no significant difference in clinical stage prior to surgery ($p = 0.145$), type of surgery performed (open, laparoscopic, or robotic) ($p = 0.484$), and pathologic stage after resection ($p = 0.433$) between the two groups.
- Modified Ryan score between the two groups also showed no significant difference ($p = 0.745$).

CONCLUSION

- This is one of the first studies to compare the pathologic response by the Ryan Score to different regimens of chemoradiotherapy in esophageal cancer-
- The data presented would suggest that there is no significant difference between the two regimens and supports clinical data suggesting similar long term results.

Table 1: Demographics and outcomes of patients undergoing neoadjuvant chemoradiotherapy for esophageal cancer stratified into patients to received Carbotaxol and Cisplatin/5-Fu