

TREATMENT AND OUTCOMES OF STAGE II COLON CANCER IN ALEXANDRIA ONCOLOGY DEPARTMENT IN VIEW OF INTERNATIONAL GUIDELINES

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Introduction

Colorectal cancer incidence and mortality rates continue to rise each year and it is now the third most prevalent cancer worldwide behind breast and lung cancer. Stage II colon cancer (CC) represents an early stage of the disease and despite the high cure rates (approximately 80%) with surgery alone, it remains a heterogeneous entity with specific clinico-pathological features increasing the risk of disease recurrence and affecting overall survival (OS) outcomes. Until conclusive randomized control data and strong supporting evidence and biomarkers are available, the postoperative recommendations remain broad, each with concomitant risks. They include observation, adjuvant chemotherapy with 5FU monotherapy or with oxaliplatin-containing doublet therapy based on risk stratification and microsatellite instability (MSI) status. In order to understand current adjuvant therapy utilization, identify treatment gaps and ultimately improve patient outcomes, it is important to evaluate institutional recommendations against real-world data to determine if they continue to be relevant and whether the clinical practice is consistent with international guidelines.

Aim of the work

The aim of this study was to review the demographic and clinicopathological features influencing outcomes of stage II CC patients presenting to the Alexandria Oncology and Nuclear Medicine Department. The primary objective was to assess the adjuvant chemotherapeutic treatment options delivered to these patients based on risk stratification (low, intermediate and high risk) and compare the chemotherapeutic protocols offered with international guidelines; with 2-year disease-free survival (DFS) as the secondary endpoint.

Patients and Methods

This study was a single-center retrospective cohort study that included all patients with a diagnosis of stage II CC who presented at the Alexandria Oncology and Nuclear Medicine Department of the Alexandria Main University Hospital from January 2017 to December 2022. Information and data from patient files and from the computerized patient portal was collected which included: 1)Demographic data (age and gender), 2) Clinico-pathological features (Intestinal obstruction at presentation, pT stage, Number of Lymph nodes dissected, Grade, resection margins, lymphovascular and perineural invasion) 3)Preoperative carcinoembryonic antigen (CEA) level 4) Molecular testing (MSI status) 5) Adjuvant treatment administered including the course and toxicity and 5) Treatment outcomes (2 year DFS).

Results

Study showed that among high risk individuals, male patients had a 5.5-fold higher rate of recurrence than females. (p=.007). Of all the clinico-pathological risk factors observed, none was associated with recurrence except for inadequate lymph node sampling. More than half (52%) of the patients who had recurrence had less than 12 LNs removed, increasing the risk of recurrence by 3.991-folds (p=.003). Although ACT was administered to the majority of patients (73.7%), no DFS benefit was noted in the entire study cohort (p=.213) . However, in the subgroup analysis, when treated with surgery alone, patients who were classified as high risk had a statistically marked increased risk of recurrence (p<.001); with Folfox and Xelox being the most prescribed regimens in this group. Patients classified as low/intermediate risk demonstrated better 2-year DFS than high-risk patients though the difference did not reach statistical validity (HR: 0.47; 95% CI 0.20-1.13, p=.09)

Table (1): Recurrence Rates in relation to Clinico-pathological Features in the study population

Clinical & Pathological Features		Recurrence		Test of Significance
		No	Yes	
Tumour Grade (n =109)	Grade 1	9	2	$\chi^2_{(df=2)}=0.294$ $P_{(MC)}=1.000$ NS
	Grade 2	71	20	
	Grade 3	6	1	
LVI & PNI (n =98)	Negative	43	13	$\chi^2_{(df=1)}=0.247$ $p=.619$ NS
	Positive	34	8	
Intestinal obstruction (n =114)	Absent	76	19	$\chi^2_{(df=2)}=1.294$ $p=.282$ NS
	Present	13	6	
Resection margins (n =114)	Free	88	24	$\chi^2_{(df=1)}=1.146$ $p=.284$ NS
	Positive	1	1	
Number of lymph nodes harvested (n = 114)	≥ 12	70	12	$\chi^2_{(df=1)}=9.082$ $p=.003^*$ OR=3.991 95% CI: (1.568 – 10.158)
	<12	19	13	
Tumour Stage (n = 114)	T3	72	18	$\chi^2_{(df=2)}=1.771$ $P_{(MC)}=.450$ NS
	T4a	8	2	
	T4b	9	5	

Table (2):Results of MSI/MMR stratified according to risk and recurrence (n = 18)

MSI/MMR Testing	Risk	Recurrence	
		No	Yes
MSI-H/dMMR (n = 3)	Low	2	0
	Intermediate	1	0
	High	0	0
MSS/pMMR (n = 15)	Low	1	1
	Intermediate	9	1
	High	3	0
Total (n = 18)		16	2
Test of Significance		$\chi^2_{(df=1)}=0.450$	
p-value		p=.502 NS	

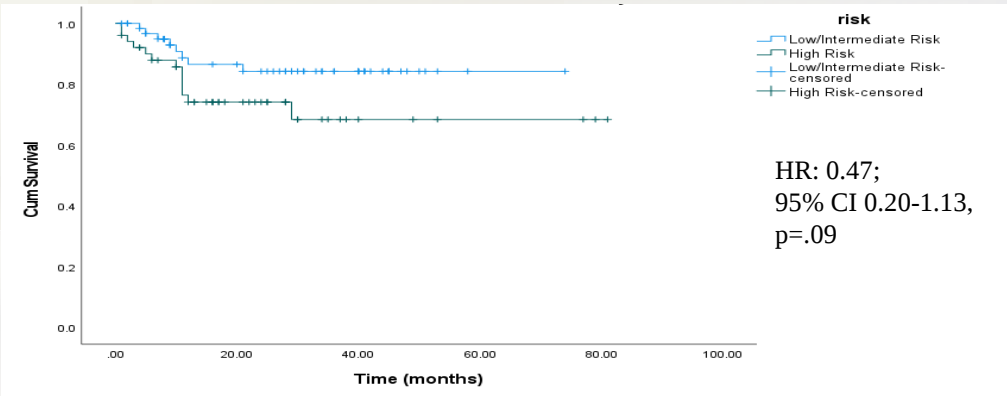


Fig. (1): Kaplan Meier Curve of 2 years DFS

Conclusion

1-Males have a 5.5-fold greater rate of recurrence than females, making male gender a risk factor for recurrence in high-risk stage II CC patients. 2-Poorer DFS outcomes were observed in stage II CC patients with inadequate (<12) LNs sampled at surgery, increasing the risk of recurrence by 3.991-folds. 3- Use of molecular testing was limited among the included patient cohort; only 18 patients had molecular testing done in the study. 4- High risk stage II CC group had worse DFS and OS outcomes when compared to the low/intermediate group. 5 – Patients categorized as high-risk stage II CC benefited from ACT and had a decreased chance of recurrence, compared to patients treated with surgery alone. ACT did not, however, show any DFS benefit in patients at low or intermediate risk.