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COMPARATIVE ANALYSIS OF QUALITY OF LIFE AND SURVIVAL RATES IN POST CA RECTUM OPERATED PATIENTS WITH AND WITHOUT PREOP RT / CHEMO

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ABSTRACT:

INTRODUCTION: Colorectal cancer is one of the deadliest cancer worldwide , standing as the third and second most common in males and females respectively , Mostly they are predominantly seen in old age people . This cancer significantly has a great impact in the quality of life of the individuals . This study aims to compare and analyse the quality of life and outcomes of the affected individuals with pre operatively radiotherapy or chemotherapy done versus directly surgery taken up patients.

METHODS : Retrospective observational study done in Saveetha medical college by the department of surgical oncology from October 2022-March 2025. The inclusion criteria included patients above 15 years of age , only rectal cancer patients , The exclusion criteria included patients less than 15 years of age and patients associated with other illness , however patients with metastatic disease were included .Quality of used was WHO scale , which consists of 100 Questions , in four domains , physical , psychological , social related and environmental .TNM staging was used in the study for analysing the patient survival rates . Based on the TNM staging - cancer staging was done

RESULTS : Total of 18 patients were operated during this study period . Male: female ratio is 2:1 . Patients who were treated pre operatively with RT /CHEMO were classified under group 1 and those who were directly taken up for the surgery were classified in group 2. Quality of life index scale used was WHO scale , which consists of 100 Questions , in four domains , physical , psychological , social related and environmental . Every patient was questioned and marked from 1-5 , from very dissatisfied to more comfortable . ACC to scores , patients categorised into good , better , poor and worst. Three patients deceased while all other 15 patients found to be alive . Mean survival years in all these individuals is 1.2 years.

CONCLUSION : Quality of life plays a very important role in every patient life . This quality of life found to be better in patients directly taken up for surgery than the patients who were given pre op RT/Chemo . Survival rates is found to have a p value > 0.005 , hence not found to have much significant difference in both the groups However more research is needed in this field as new techniques of surgery are emerging .

INTRODUCTION

Colorectal cancer is one of the deadliest cancer worldwide , standing as the third and second most common in males and females respectively , Mostly they are predominantly seen in old age people . This cancer significantly has a great impact in the quality of life of the individuals . This study aims to compare and analyse the quality of life and outcomes of the affected individuals with pre operatively radiotherapy or chemotherapy done versus directly surgery taken up patients.

PATIENTS AND METHODS :

This is a retrospective observational study conducted in Rural area and renowned institute , Saveetha medical college . The study was conducted during the time period of October 2022- March 2025 , Inclusion criteria involved age more than 15 years of age and only ca rectum operated patients with or without metastasis ,

Exclusion criteria involved age less than 15 years of age and other cancers and other illness excluded from the study. Patients were diagnosed based on the clinical and radiological findings . Patient usually presents with the symptoms of bleeding per rectum , Tenesmus (spurious diarrhoea) and early morning diarrhoea and findings per rectum involved growth or blood or mucus secretion , blummer shelf deposits , Radiologically growth could be seen along with stages of the tumour can be ascertained . Quality of life index scale used was WHO scale , which consists of 100 Questions , in four domains , physical , psychological , social related and environmental . Every patient was questioned and marked from 1-5 , from very dissatisfied to more comfortable . Total points for all the questionnaires is 500. From the scores - patients categorised as good , better , poor and worst . TNM staging was used in the study for analysing the patient survival rates . Based on the TNM staging - cancer staging was done .

RESULTS

Total of 18 patients were operated during this study period . Male: female ratio is 2:1 . Patients who were treated pre operatively with RT /CHEMO were classified under group 1 and those who were directly taken up for the surgery (Low anterior resection) were classified in group 2. Total of 12 (66.66%) patients under 1 whereas 8 (44.44%) under 2. In group 1, 7 males (70%)and 3 females (30%) were present whereas in group 2, 5 males (62.5%) , and 3 females (37.5%) were seen . All patients vitals were stable at the time of diagnosis. Patients mostly taken up for surgery were post operatively treated with chemotherapy except for 11.11% (n-2) of the population. All eighteens patients had adenocarcinoma as their HPE report postop . Quality of life in both the groups were done based on the WHO scale and classified as good , better , poor, worse . In group 1, 20% in good grade , 30% in better grade , 20% in poor grade and 30% in worse grade . In group two 75% were fell under good grade , 12.5% under better grade and 12.5% in poor grade and no percentage of populations fell under worse grade . Those who fell under worse grade eventually deceased ., out of which two of them died during their hospital stay with severe complications and one died at home . All of them found to have metastasis to lungs and peritoneum . No recurrences seen in group two , whereas , 40% (n-4) found to have recurrences in group one . Based on the TNM staging, 7 patients belonging to stage 1 and one patient of stage 3 were directly taken up for surgery whereas three patients belonged to stage 4 , six patients belonged to stage 3 whereas one belonged to stage 2. All patients in stage 4 surcumbed to death. Average Survival rates in both the groups is one year . Survival rates in group 1-75% and group 2-100%. Mortality rate is 16.66% in group 1 and in group 2-0% . Mean QOL in group 1-2.4, group 2-3.64, standard deviation -grp-1: 1.17, group -2 0.74, Confidence interval - grp -1: 1.56-3.24 and confidence interval -grp -2: 3.01-4.24 Survival rate >0.005 in both groups and thus no significant difference in both the groups.

Patient Demographics

Parameter	Group 1 (RT/Chemo Pre-op)	Group 2 (Surgery Only)	Remarks
Total Patients	10 (66.66%)	8 (44.44%)	
Male: Female	7:3 (70% M, 30% F)	5:3 (62.5% M, 37.5% F)	More males in both groups
All Vitals Stable	✅	✅	

TABLE -1: SHOWS COMPARISON OF PATIENT DEMOGRAPHICS WITH BOTH THE GROUPS

TNM Staging

Stage	Group 1	Group 2
Stage I	—	7 patients
Stage II	1 patient	—
Stage III	6 patients	1 patient
Stage IV	3 patients (all deceased)	—
Remarks	More advanced cases	Early-stage cancers mostly

TABLE -2: SHOWS COMPARISON OF TNM STAGING WITH BOTH GROUPS

Mortality & Survival

Parameter	Group 1	Group 2	Remarks
Mortality Rate	16.66% (n=3)	0%	Group 1 deaths all Stage IV w/ metastasis
Survival Rate	75%	100%	
Mean Survival Time	1 year	1 year	
p-value (Survival)	> 0.005	> 0.005	Not statistically significant

TABLE -3: SHOWS COMPARISON OF MORTALITY AND SURVIVAL RATES WITH BOTH GROUPS.

Quality of Life (WHO Scale)

Grade	Group 1 (%)	Group 2 (%)	Remarks
Good	20%	75%	Much better QOL in Group 2
Better	30%	12.5%	
Poor	20%	12.5%	
Worse	30%	0%	All patients in "worse" grade died

TABLE -4 SHOWS COMPARISON OF QUALITY OF LIFE (WHO SCALE) WITH BOTH GROUPS .

Statistical Analysis (QOL Scores)

Metric	Group 1	Group 2
Mean QOL Score	2.4	3.64
Standard Deviation	1.17	0.74
95% Confidence Interval	1.56 – 3.24	3.01 – 4.24
p-value (Survival)	> 0.005	> 0.005

TABLE -5: SHOWS COMPARISON OF STATISTICAL ANALYSIS WITH BOTH GROUPS.

Parameter	P-Value (Approx)	Significant?	Notes
Sex distribution	> 0.99	No	Similar male/female ratio
Chemotherapy received	~0.20	No	Most received chemo
Quality of Life	~0.05–0.10	Borderline	Better QoL in Group 2
Mortality	~0.24	No	Higher in Group 1 but not significant
Recurrence	~0.03	Yes	Higher in Group 2
Survival rate	~0.24	No	Group 2 had higher surviv

TABLE -6: SHOWS VARIOUS PARAMETERS WITH P VALUE AND SIGNIFICANCE

DISCUSSION

Colorectal cancers is one of the deadliest cancer worldwide , standing as the third and second most common in males and females respectively , Incidence of colorectal cancers are high , hence study is more necessary with the quality of life in this field . (1) Mostly they are predominantly seen in old age people . This cancer significantly has a great impact in the quality of life. The testing and treatment planning in latest guidelines is done based on mismatch repair testing . Many syndromes such as the lynch syndromes , familial adenomatous polyposis are found to be associated with ca rectal cancers . This can be tested by using blood and salivary samples . CEA levels have found to be in higher levels than the normal. However this is not a relatable on as they are raised in other conditions such as pregnant people and tobacco users too. ctDNA , known as circulating DNA which is known as liquid biopsy is useful for predicting recurrence rates . This works based on the release of tumour cells unit the blood and can easily detect microscopic rectal cancer cells which remain in the body after the treatment . But however this test is till under clinical trials . Bio markers can also be used in the diagnosis of cancers . Testing for many bio markers has bricks a hallmark of next generation sequenc ing . RAS, (KRAS,and NRAS) ,BRAF mutations , HER2 amplification , and etc are the main biomarkers. MRI is used if patient is planned for surgery in view of the depth of cancer growth and also for verification to the spread of nearby lymph nodes . It is safe as it doesn't involve radiation . Contrast may or may not be used . Eventhough it is safe , however it is found to be unuseful in presence of heart pacemakers and surgical clips. Ct is recommended in most cases with contrast and ct is used to detect metastasis to other organs such as lungs , liver and other organs . Extent of the disease in pelvis can be detected using endosound ultrasound . This works by introducing small probe into the rectum and

formation of echoes which can be seen on the screen . It is also used as a guide for biopsy or other areas near the rectum . However after surgery with or without radiotherapy according to the NCCN guidelines for stage 2 & 3 , Phy examination with CEA testing should be every 3-6 months for every first two years and every six months in next three years . Ct of abdomen , pelvis and chest should be done for every 6-12 months for every five years. If total colonoscopy not available at the time of diagnosis, then colonoscopy to be done 3-6 months after surgery , if total diagnosis is present then colonoscopy to be done 1year after surgery , if no advanced adenomas found then repeat after six years and to be then repeated every five years . The mortality is about 1.2 % per year. Patients present with hrs symptoms of bleeding of painless bright red colour mixed with the stools and found to be separate in the toilet, tenesmus , which is referred to as the need for sensation of needing to defecate but unable to pass motion . The patient may want to empty the rectum multiple times a day (spurious diarrhoea) associated with passage of flatus and bloody slime (blood stained mucus) Thus , they experience altered bladder and bowel movements and such above symptoms mostly seen in the lower third of rectum When the cancer progresses to later stages , patient may experience pain and also weight loss also will be seen (mostly in metastasis) . On examination of the patient , abdomen is usually normal. On DRE , ulcer found to be within 7-8 cm of the anal verge . It is usually inverted , elevated and hard endoluminal mass . Several risk factors play a very important role such as age , hereditary syndromes,renal transplantation , Diabetes etc. There are several protective factors which are involved in colorectal cancers such as physical activity high fibre diet , diet high in fruits and vegetables , folic acid , Vitamin C . Carcinomas spread via three ways , local , lymphatic and venous spread . Locally , spread is circumferential rather than longitudinal , through lymphatics spread through upward direction , and spreads to organs like lungs (22%) liver (34%) , adrenals (11%) and others divided among other locations (33%) through venous system . Quality of life was first introduced in 1960. However health related quality of life is an important aspect in colorectal cancer patients .(2) WHO definition describes quality of life as an: “individual’s perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns” (3). Various quality of life index scales were used in many other studies such as the PANAS, MRS , MMSE , QLQ-C30, SF-36, KPS, EFS QLI etc . (4) But all theses scales were based mostly on only one domain either emotional , social , sexual , physical or psychological. But WHO scale is the only one which is a combination of all the domains. Survival rates however , due to increased loads of therapies have escalated to 78.6% worldwide when compared with the our study which is 75% in group one and 100% in another group. study. Survival and disease relapse rates also depend on the staging of the disease regarding both the degree of bowel wall penetration by the primary cancer and nodal status (4,5) . Suggested that patients have negative impact in QOL , however our studies suggest that they have a positive impact in QOL .QOL found to have be less in women compared to Male , reverse in sexual life . Camma et al. (6) showing a decreased local recurrence rate, cancer mortality rate, and overall mortality rate with the use of preop-erative radiation therapy, although without a decrease in distant metastasis rate.according to colorectal cancer collaboration group 2001 in adjuvant radiation therapy in rectal cancer yearly risk of recurrence is 46% decrease with RT , but however doesn’t give a guarantee on that. Death rate is found to be 5% less than with surgery . When compared to our study no recurrences seen when Rt was given , however death percentage rate was found to be 16.66% in our study, which is high compared to the their study. Sauer et al (7) said that there is a lesser failure rate when pre op chemotherapy is given . A study made in Swedish suggest that longer lifetime is present when ore op radiotherapy is given . (8) Study done by Tepper et al and Gunderson et al suggest that local recurrence and relapse rates are absolute ones but not five year actuarial. (9,10,11) . German phase III trials support pre op chemotherapy and radiotherapy for high risk patients (12). But when compared to our study the pre op radiotherapy given before surgery actually lead to the mortality rates and QOL life too is not better in pre op groups than patients directly taken up for surgery . However controversy is seen in patients with intermediate risk such as patients belonging to T2N1 and T3N0 whether pre op chemotherapy is necessary or not .(13,14) However in our study , the patients belonging to this category were given pre op radiotherapy and these patients had better outcome and good QOL. QOL is decided not only based on the pre op radiotherapy is given or not but also decided based on the surgical procedure too. (15,16) . Quality of life also depends on the sex of the individuals , poor quality seen in females irrespective of the treatment than the Male individuals (17) , In comparison with our study , females found to have the poor quality of life (63%) along with mortality rates seen in two females where only one Male individual was involved Patients with stage 2,3 have lower quality of life than stage one ,(18) however in our study also proven similarly with stage one people found to be comfortable , doing their own work and returning back to their professional , thus financial burden being reduced .

CONCLUSION

Quality of life plays a very important role in every patient life . This is particularly very important to be taken into consideration due to the increase in incidence of the disease . (19,20) . This quality of life found to be better in patients directly taken up for surgery than the patients who were given pre op RT/Chemo . Survival rates is found

to have a p value > 0.005 , hence not found to have much significant difference in both the groups . However more research is needed in this field as new techniques of surgery are emerging .

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