

## **Original Research Article**

# **The Incidence and Survival Outcome of Rectal Cancer: A Study in the West of Iran**

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**Abstract:** Rectal cancer is a frequent presentation, with an estimated 35% of cases found situated in the rectum. The aim of this study is to survey on patients with rectal cancer and report of 2 and 3 overall survival rates of them. Between of 2011 and 2016 years, 102 patients with rectal cancer referred to Department of Radiation Oncology in Imam Reza hospital, Kermanshah city, Iran. We analyzed sex, age, type of pathology, grade tumor, overall survival, lymph node, margin and vascular invasion in patients. Curve of the OS was plotted by Kaplan-Meier plot in Graph Pad prism 5 Software in 2 and 3-year period. The mean age of patients at diagnosis was  $52.83 \pm 14.58$  years (range: 17-79 years) that fifty-four patients (52.9%) were male. Kind of pathology in 90 patients (90%) was invasive adenocarcinoma and 10 patients (10%) was mucinous adenocarcinoma. Tumor grade of seventy-seven, twenty-two and one patients was well, moderately and poorly differentiated, respectively. Thirty-seven, twenty-two and twenty-four percent of patients had lymph node, margin and vascular invasion, respectively. The two and three years overall survival rate in our study were 78% and 70%, respectively. Our results are similar to other studies. We should have some studies on therapeutic methods, the role of biomarkers, genetic and environmental factors about rectal cancer in future.

**Keywords:** Mucinous Adenocarcinoma Overall Survival, Rectal Cancer.

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## **INTRODUCTION**

Colorectal cancer (CRC) is the fourth most common cancer in men and the third most common in women [1]. Rectal cancer is a frequent presentation, with an estimated 35% of cases found situated in the rectum [2]. Different factors like environmental factors, genetic factors such as aberrant DNA methylation, behavioral and metabolic risk factors have been suspected in etiology and outcome of this tumor [3]. Rectal cancer generally has been a disease of old age with an average age at diagnosis around 65 years [4]. In recent years, presentation at an early age has become more common. An annual incidence increase of 2.6% in the 20-40 year age group has been observed in comparison with only 0.2 percent increase in colon cancer [5]. The history of evolving standards for the pathologic examination of rectal carcinoma specimens mirrors the advance in our understanding of colorectal carcinomas [6]. Lymph node metastasis, depth of bowel wall invasion, differentiation of the tumor, serum CEA level, clinical stage, age at diagnosis and ethnic group were significant in RC [7]. The aim of this study is to survey on patients with rectal cancer and report of 2 and 3 overall survival rate of them.

## **PATIENTS AND METHODS**

Between of 2011 and 2016 years, 102 patients with rectal cancer referred to Department of Radiation Oncology in Imam Reza hospital, Kermanshah city, Iran. We analyzed sex, age, type of pathology, grade tumor, overall survival, lymph node, margin and vascular invasion in patients. Patients who did not complete the follow-up, excluded from the study (15%). The mean follow-up for the patients was 26 months (range, 1- 62 months). The curve of the OS was plotted by Kaplan-Meier plot in Graph Pad prism 5 Software in 2 and 3-year period.

## **RESULTS**

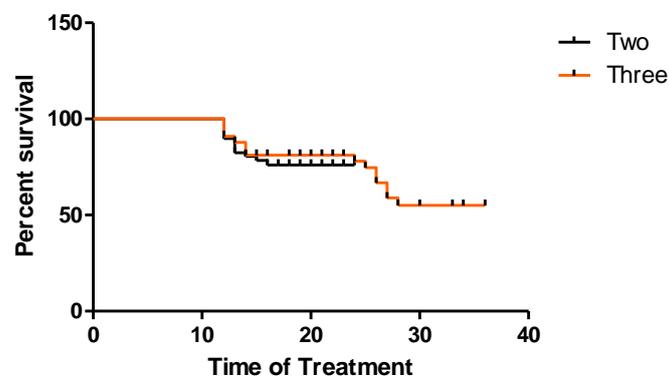
The mean age of patients at diagnosis was  $52.83 \pm 14.58$  years (range: 17-79 years). Fifty-four patients (52.9%) were male and forty-eight (47.1%) were female. Forty (39.2) patients are located in the range (< 50 years), 24 patients (23.5%) in (50-59), 24 patients (23.5%) in (60-69), 14 patients (13.7%) in (70-79). Kind of pathology in 90 patients (90%) was invasive adenocarcinoma and 10 patients (10%) was mucinous adenocarcinoma. Tumor grade of seventy-seven, twenty-two and one patients was well, moderately and poorly differentiated, respectively. Thirty-seven, twenty-two and twenty-four percent of

patients had lymph node; margin invasion and vascular invasion, respectively (Table 1).

The two and three years overall survival rate in our study were 78% and 70%, respectively.

**Table 1: Characteristics of rectal cancer patients**

Variables	n(%)	Mean±SD	Range
<b>Age (year)</b>		52.83±14.58	17-79
<b>Age group (year)</b>			
<50	40(39.2)		
50-59	24(23.5)		
60-69	24(23.5)		
70-79	14(13.7)		
<b>Sex</b>			
Male	54(52.9)		
Female	48(47.1)		
<b>Type of Pathology</b>			
Invasive Adenocarcinoma	90		
Mucinous Adenocarcinoma	10		
Unknown	2		
<b>Grade</b>			
Well	77		
Moderate	22		
Poor	01		
Unknown	4		
<b>Lymph Node Involvement</b>			
Positive	37		
Negative	63		
Unknown	34		
<b>Margin Involvement</b>			
Positive	22		
Negative	78		
Unknown	29		
<b>Vascular Involvement</b>			
Positive	24		
Negative	76		
Unknown	43		
<b>Site of Tumor</b>			
Rectum	81.4		
Rectosigmoid	18.6		



**Fig. 1: The 2-year and 3-year overall survival**

## DISCUSSIONS

According to the Iranian annual national Cancer Registration Report, CRC is the third most common cancer in Iranian women and fifth in men. The incidence of CRC has increased during the last 25 years [8]. Overall, adjusted survival and 1-, 2-, 3-, 4- and 5-year survival for patients with rectal cancer were better than those of colon cancer. This shows the better overall and year by year condition of patients with rectal cancer. Other studies confirm this result too [9,10]. According to EUROCARE3, five-year rectal cancer survival in the Nordic countries and Scotland between 1990 to 1994 was variable between these countries: for men it was highest in Norway (62.8%) and lowest in Finland (33.9%) and for women it was highest in Sweden (62.4%) and lowest in Iceland (33.1%) [11]. A study in Tehran between Jan 2002 to Jan 2007 [12], reported five-year survival in colon and rectum cancers was 56.8% and 41.9%, respectively. Two and three overall survival rate in our cases was 78% and 70%, respectively. Variable outcomes have been reported for rectal cancers presenting at the young age. Predicted survival of 38% at five years in the current study in the younger patients is slightly low and can be due to high percentage of poorly differentiated, mucinous adenocarcinoma with advanced pathological stage. Studies with similar histopathological distribution in young age cancers have reported survival as low as 30% [13,14] that our study confirms it. Other study demonstrated that tumor differentiation and patient age are also important variables, confirming previous reports [15,16]. Common sites involved were rectum (43.48%) [17], but our report was very high in rectum (81.4%). However, have noted patients aged less than 40 years to have a poorer prognosis [18]. This may be due to later diagnosis in these patients [19], since a gloomy prognosis for young patients with rectal cancer is confirmed only for those with lymphatic metastases; for those without them, the long-term outlook is hopeful [13].

## CONCLUSION

Except site of tumor variable, our results were similar to other studies, approximately. We should have some studies on therapeutic methods, the role of biomarkers, genetic and environmental factors about rectal cancer in future.

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