Colorectal Cancer in Nonagenarians: Treatment Decisions and Outcomes.

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Colorectal Cancer in Nonagenarians: Treatment Decisions and Outcomes

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INTRODUCTION: From 2008 – 2012, approximately 12% of colorectal cancers (CRC) were diagnosed in patients 85 years of age or older. This age group currently represents 2% of the U.S. population and it is estimated that by 2040, this cohort will more than double in size, to 14.7 million people. Consequently, the number of CRC diagnosed in this age group will rise steadily.

OBJECTIVE: To examine outcomes of nonagenarians diagnosed with CRC, as well as to determine some of the factors involved in the decision-making process regarding choice of treatment.

DESIGN: Retrospective review of nonagenarians patients diagnosed with CRC between 2005 and 2014 from the LVHN Tumor Registry. We identified patients undergoing any surgical intervention and those who declined any treatment, and compared the 1-year survival between the 2 groups. We also examined the factors involved in treatment decision, including:

- Modified Frailty Score (MFS)
- Presence of surrogate decision-maker
- Presence of metastatic disease
- Pre-hospital residence

For patients who underwent surgery, we examined their outcomes, including postoperative morbidity, 30-day mortality and long-term survival. Statistical analysis was performed using Chi-square analysis and logistic regression.

SETTINGS: This study was conducted at a single tertiary center

PATIENTS: A total of 100 patients were included, with a median follow-up of 12 months. 65 patients underwent surgical intervention, while 35 patients declined any treatment.

RESULTS

Patients in the treatment group had a higher 1-year survival compared to those who chose no treatment (53.8% vs 17.1%, p<0.0005) and a Mean survival of 23 months vs 5.4 months.

Within the surgical treatment group:

- Postoperative mortality (13.8%)
- Procedure with curative intent (80.3%).
  - Mortality within this subgroup (8.8%).
- Postoperative morbidity (35.4%).

Univariate analysis:

- Presence of surrogate decision-maker (p=0.008) and metastatic disease (p<0.0001) were predictive of declining treatment.

Multivariate analysis:

- Presence of metastatic disease associated with declining treatment (p<0.0001).

Increased frailty (MFS 3+) was not found in patients declining treatment or in patients with poor surgical outcomes. In the treatment group, increased MFS was associated longer length of stay (12.1 vs 8.2 days, p=0.028), but not associated with delayed return of bowel function, increased surgical site infection or 30-day readmission rate.

Table 1. Patient Characteristics and Results

	Surgery	No Surgery	p-value
n	65	35	
Age (mean)	92	93	
Gender			
Men, n (%)	16 (24.6)	14 (40)	0.117
Women, n (%)	49 (75.4)	21 (60)	
Surrogate, n (%)	5 (7.7)	10 (28.6)	0.008
Assisted living, n (%)	15 (21.1)	11 (31.4)	0.474
Metastatic disease, n (%)	6 (9.2)	14 (40)	<0.001
Modified Frailty Score			
Low (0-2), n (%)	27 (41.5)	18 (51.4)	0.402
High (3+), n (%)	38 (58.5)	17 (48.6)	
1-year survival, n (%)	35 (53.8)	6 (17.1)	0.0005
5-year survival, n (%)	7 (9.9)	0 (0)	NA

Table 2. Surgery Subgroup Comparison

	Overall	MFS Low	MFS High	p-value
n	65	27	38	
Length of stay, days	10.5	8.2	12	0.034
Return of bowel function, days	4.49	4.63	4.39	0.667
SSI, n (%)	10 (15)	3 (11)	7 (18)	0.503
Anastomotic leak, n	1	1	0	NA
30-day Readmission, n (%)	12 (18.5)	4 (14.8)	8 (21)	0.747
Postop Mortality, n (%)	9 (13.8)	3 (11)	6 (15.8)	0.724
Postop complications, n (%)	23 (35.4)	11 (37)	12 (31.6)	0.6045

CONCLUSIONS

Nonagenarian patients diagnosed with CRC have a significantly higher 1-year survival with surgical intervention compared to those who decline treatment. Surgery can be performed in these patients with acceptable postoperative mortality and 1-yr survival. MFS was not useful as a predictor in neither treatment decision-making nor surgical outcomes for these patients.