

# Colorectal Cancer in Nonagenarians: Treatment Decisions and Outcomes

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# Colorectal Cancer in Nonagenarians: Treatment Decisions and Outcomes

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## Purpose

From 2008-2012, approximately 12% of colorectal cancers were diagnosed in patients 85 years of age or older. While this age group currently represents 2% of the U.S. population, it is estimated that by 2040, this age cohort will more than double in size, to over 14.7 million. Consequently, the number of colorectal cancers diagnosed in the elderly will rise steadily as well. Cancer treatment in the elderly population poses several challenges, both physiologically and ethically. While several studies have looked at elderly patients with colorectal cancer, few have specifically examined nonagenarians as a subgroup. The purpose of our study was to examine outcomes of nonagenarians diagnosed with colorectal cancer at LVHN, as well as to determine some of the factors involved in the decision-making process regarding choice of treatment.

## Methods

Retrospective review of patients in the LVHN Tumor Registry from the 10-year period 2005-2014. We identified those patients who had any surgical intervention, and those that chose no treatment. We then compared 1-year survival for the 2 groups. We also examined the factors involved in treatment decision, including Modified Frailty Score (MFS), presence of surrogate decision-maker, and presence of metastatic disease. For those patients who chose surgical intervention, we examined their outcomes, including postoperative morbidity and mortality, and long-term survival. Statistical analysis was performed using Chi-square analysis and logistic regression.

## Results

106 patients were included in the study; 71 underwent surgical intervention, while 35 chose no treatment. Patients who chose surgical intervention had a higher 1-year survival compared to those who chose no treatment (54.9% vs 17.1%,  $p < 0.0005$ ). Metastatic disease ( $p < 0.0005$ ) and presence of surrogate decision-maker ( $p = 0.004$ ) were predictive of declining treatment. For patients in the surgery group, mean survival was 23.7 months, and 5-year survival was 9.9%. The vast majority of the surgical patients had a procedure with curative intent (80.3%). Postoperative mortality for the group was 14%, while morbidity was 32.4%. Postoperative mortality for those patients undergoing curative surgery was 8.8%. Increased Modified Frailty Score was not found in patients declining treatment or in patients with poor surgical outcomes.

Table 1: Outcomes Comparing Surgery vs No Surgery

	Surgery (n=71 pts)	No Surgery (n=35 pts)	p-value
1-yr survival	54.9%	17.1%	$p < 0.0005$
Metastatic disease	9.9%	50%	
POA/NOK	7.0%	28.6%	$p = 0.004$
High-risk MFS	56.3%	48.6%	ns
Assisted living	21.1%	31.4%	ns

POA/NOK = power of attorney or next of kin surrogate decision maker.

## Conclusions

Nonagenarian patients diagnosed with colorectal cancer 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, especially in those patients having curative resection. Modified Frailty Score was not useful as a predictor in neither treatment decision-making nor surgical outcomes.

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