

Long-Term Outcomes Of Young-Onset Colorectal Cancer In India: A 10-Year Multicenter Retrospective Cohort Study

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INTRODUCTION

- Young-onset colorectal cancer (YO-CRC), defined as diagnosis before age 50 years, is increasing globally
- Limited data are available from South Asia, particularly India
- India faces unique challenges including delayed diagnosis, variable screening access, and heterogeneous healthcare systems
- Understanding disease behavior is critical for prevention and earlier intervention

AIM

- To compare clinical presentation, tumor characteristics, and long-term survival outcomes between:
 - Young-onset colorectal cancer (YO-CRC, <50 years)
 - Average-onset colorectal cancer (AO-CRC, ≥50 years)
- Study conducted in an Indian multicenter cohort

METHOD

- Multicenter retrospective cohort study across 5 tertiary hospitals in India
- Study period: January 2014 – December 2023
- Adults with histologically confirmed colorectal adenocarcinoma included

Study Groups

- YO-CRC: <50 years
- AO-CRC: ≥50 years

Variables Collected

- Demographics
- Symptoms and diagnostic delay
- Tumor location and stage
- Molecular markers (KRAS, BRAF, MSI)
- Treatment patterns
- Overall survival (OS)
- Progression-free survival (PFS)

Statistical Analysis

- Kaplan–Meier survival analysis
- Multivariable Cox proportional hazards regression

RESULTS

PATIENT POPULATION

- Total patients: 3,842
- YO-CRC: 1,126 (29.3%)
- AO-CRC: 2,716 (70.7%)

Key Findings			
Variable	YO-CRC	AO-CRC	P value
Left-sided tumors	62.1%	48.4%	<0.001
Rectal involvement	41.3%	28.2%	<0.001
Stage III–IV disease	68.7%	54.9%	<0.001
Diagnostic delay (months)	7.8	4.2	<0.001
MSI-high tumors	11.6%	6.7%	0.002

Survival Outcomes			
Outcome	YO-CRC	AO-CRC	Outcome
5-year overall survival	58.3%	64.9%	5-year overall survival
Median progression-free survival	28.4 months	34.7 months	Median progression-free survival

Additional Findings

- YO-CRC associated with worse overall survival
- Adjusted hazard ratio for death: 1.21 (95% CI 1.06–1.39)

CONCLUSIONS

- Nearly 1 in 3 CRC cases in this cohort occurred before age 50.
- YO-CRC patients presented with more advanced disease and longer diagnostic delays.
- Survival outcomes were significantly worse despite younger age.
- Findings support earlier evaluation of symptoms and risk-based screening strategies in India.

REFERENCES

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- National Cancer Institute: CRC Epidemiology Reports
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- Current multicenter Indian cohort study (2014–2023)

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