

RISK FACTORS ASSOCIATED WITH ADENOMA MULTIPLICITY IN A SCREENING COHORT

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Background

Little is known about the prevalence, clinical characteristics, and long-term outcomes of patients with ≥ 10 cumulative adenomas.

Aims

- Estimate the proportion of individuals undergoing screening colonoscopy who develop ≥ 10 cumulative adenomas.
- Examine the demographic and baseline clinical risk factors that are associated with having ≥ 10 cumulative adenomas.
- Describe the proportion of patients with advanced neoplasia (AN) and colorectal cancer (CRC).

Patients and Methods

The *Prospective Evaluation of Risk Factors for Large (≥ 1 cm) Colonic Adenomas in Asymptomatic Subjects* (CSP 380) cohort is comprised of 3121 subjects age 50-75 who had a screening colonoscopy between 1994 and 1997. These patients were followed for 10 or more years until death or last colonoscopy. This analysis includes the 3089 subjects with no cancer at baseline. At least one follow-up exam was performed in 1975 patients.

Baseline characteristics of subjects with ≥ 10 cumulative adenomas were compared to those of subjects with 0-9 cumulative adenomas.

- Demographic and lifestyle factors
- Proportion with AN (defined as polyp ≥ 1 cm, villous histology, high grade dysplasia, or CRC)

References

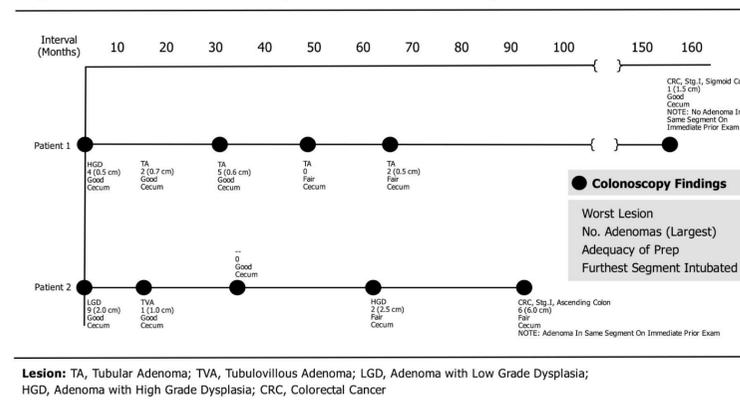
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Results

Table 1. Risk Factors Associated with 10 or More Cumulative Adenomas.

Risk Factors for Adenoma Multiplicity	Number of Patients with <10 adenomas (n = 3,023)	Number of Patients with ≥ 10 adenomas (n = 66)	Odds Ratio (95% CI)	P Value	
Age	50-59	1,030 (98.85%)	12 (1.15%)	ref	ref
	60-69	1,417 (97.13%)	42 (2.88%)	2.54 (1.33 – 4.86)	0.005
	70-75	576 (97.96%)	13 (2.04%)	1.79 (0.80 – 4.01)	0.158
Race	Caucasian	2,517 (97.63%)	61 (2.37%)	ref	ref
	African-American	289 (98.30%)	5 (1.70%)	0.71 (0.29 – 1.79)	0.473
Family History	No Family History	2,431 (97.91%)	52 (2.09%)	ref	ref
	One 1 st Degree Relative with CRC	530 (97.60%)	13 (2.40%)	1.15 (0.62 – 2.12)	0.663
	Two or More 1 st Degree Relatives with CRC	27 (96.43%)	1 (3.57%)	1.73 (0.23 – 12.98)	0.593
BMI	18.5-24.9	590 (98.50%)	9 (1.50%)	ref	ref
	<18.5	19 (95%)	1 (5.00%)	3.45 (0.42 – 28.63)	0.251
	25-29.9	1,351 (97.55%)	34 (2.45%)	1.65 (0.79 – 3.46)	0.186
	30-39.9	935 (98.01%)	19 (1.99%)	1.33 (0.60 – 2.96)	0.482
	≥ 40	96 (98.97%)	1 (1.03%)	0.68 (0.09 – 5.45)	0.719
Tobacco Use	Never	748 (98.55%)	11 (1.45%)	ref	ref
	Prior Smoker	1,598 (97.67%)	38 (2.32%)	1.62 (0.82 – 3.18)	0.164
	Current Smoker	669 (97.52%)	17 (2.48%)	1.73 (0.80 – 3.72)	0.161
Alcohol Use	Never	1,774 (97.80%)	40 (2.21%)	ref	ref
	1-14 Drinks Weekly	921 (98.30%)	16 (1.70%)	0.77 (0.43 – 1.38)	0.383
	> 14 Drinks Weekly	300 (97.08%)	9 (2.91%)	1.33 (0.64 – 2.77)	0.445

Figure 1. Surveillance Colonoscopies & Interval Cancer Diagnosis



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Findings

Table 2. Proportion of Patients with AN and CRC.

	Patients with 0-9 Adenomas	Patients with ≥ 10 Adenomas
Total Number of Patients	3023 (97.9%)	66 (2.1%)
Average Number of Colonoscopies	1.5	3.6
Days Between Colonoscopies	1576.7	853.7
Finding of AN	348 (11.5%)	42 (63.6%)
Finding of CRC	23 (0.8%)	2 (3.0%)

- Ten or more cumulative adenomas were found in 66 (2.1%) of the 3089 patients.
- Patients with ≥ 10 cumulative adenomas had more frequent colonoscopies with a shorter interval between examinations.
- AN was found in more than half (64%) of these patients, and CRC in 3%.
- Age 60-69 is the single baseline risk factor associated with ≥ 10 adenomas.
- Subjects with ≥ 10 cumulative adenomas had a markedly higher risk of AN.
- Two patients with <10 adenomas at baseline developed ≥ 10 adenomas and subsequent CRC. Their time course, number of colonoscopies, and colonoscopy findings are shown in Figure 1.

Conclusions

- We identified ≥ 10 cumulative adenomas in about 2% of this screening population, with few cases before age 60.
- There is no identifiable cluster of demographic and clinical risk factors associated with the finding of ≥ 10 cumulative adenomas.
- Few patients with ≥ 10 cumulative adenomas go on to develop CRC. Additional factors are needed for more effective risk stratification and identification of those who might benefit from genetic counseling.

Future Work

- Evaluate the proportion and impact of genetic counselling referrals in patients with ≥ 10 cumulative adenomas.
- Identify potential genomic factors associated with an increased risk of adenoma multiplicity, AN, and CRC, using blood and tissues collected from this cohort.
- Validate these findings in a larger screening cohort.
- Develop a post-baseline colonoscopy risk stratification tool that can identify patients at high risk for an underlying genetic CRC syndrome and likely to develop interval AN or CRC, as these patients are more likely to benefit from continued intensive surveillance and earlier genetic counseling.