

# Risk Factors of Colorectal Cancer after a Colonoscopy: A Retrospective Cohort Study of Australian Patients Aged 75 and Older

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- Post colonoscopy colorectal cancer (CRC) presents a clinical challenge in people aged  $\geq 75$  years.
- Older age, previous resection of colorectal neoplasia, prior incomplete colonoscopies and greater number of colonoscopies increased risk of CRC in older people.

## BACKGROUND

- Colorectal cancer (CRC) risk increases with age and can be prevented through ongoing surveillance colonoscopy<sup>1</sup>.
- Colonoscopy is generally not recommended beyond age 74y due to increased co-morbidities, poor bowel preparation and adverse events such as bleeding and bowel perforation<sup>2,3</sup>.
- Careful assessment is required to identify those at risk of CRC for colonoscopy surveillance.
- **This study aimed to determine predictors of post-colonoscopy CRC (PCCRC) in people aged  $\geq 75$ y.**

## METHODS

- We conducted a retrospective observational cohort study on individuals aged  $\geq 75$ y at above-average risk of CRC (due to a prior history of colorectal neoplasia and/or a significant family history of CRC).
- All individuals were enrolled in a South Australian CRC surveillance program (SCOOP) and undergoing surveillance colonoscopy at guideline-recommended intervals until age 75y<sup>4</sup>.
- Demographics, family history of CRC, colonoscopy and prior faecal immunochemical test (FIT) results before turning 75y were extracted from clinical records.
- FIT, which detects tiny amount of blood in stool, was provided between colonoscopies.
- Development of CRC was identified through data linkage with the South Australian Cancer Registry.
- Predictors of PCCRC were identified using Cox proportional hazards regression in R.

## RESULTS

- A total of 126 PCCRC cases were diagnosed in 3,842 individuals aged  $\geq 75$ y (54.9% male).
- The median follow-up time from last colonoscopy was 7.9 years per person (interquartile range 3.1-13.2).
- Older age, previous resection of advanced pre-cursor lesions (including high-grade dysplasia, size  $\geq 10$ mm, villous component, or  $\geq 3$  tubular adenomas), immediately prior incomplete colonoscopy procedure and greater number of prior colonoscopies, were each associated with increased risk of developing PCCRC (Table 1 and Figure 1).
- Risk for PCCRC was reduced for those with greater number of FIT completion (Table 1).

Table 1: Predictors of Post Colonoscopy Colorectal Cancer after age 74

Risk factor	N	PCCRC (%)	Hazard Ratio (95% CI)
<b>Age (years)</b>			
75-79y	2968	76 (2.5%)	Reference
80-85y	1018	34 (3.2%)	2.6 (1.6 - 4.1)
>85y	419	16(3.7%)	3.3 (1.7 - 6.4)
<b>Previous resection of advanced neoplasia</b>			
No	2492	62 (2.4%)	Reference
Yes	1910	64 (3.2%)	1.8 (1.2- 3.3)
<b>Prior incomplete colonoscopy</b>			
No	3618	83 (2.2%)	Reference
Yes	787	43 (5.2%)	3.0 (1.7 - 5.2)
<b>Number of total prior colonoscopies</b>			
	3842	126	1.2 (1.1 - 1.4)
<b>Number of total FIT</b>			
	3842	126	0.81 (0.73 - 0.90)

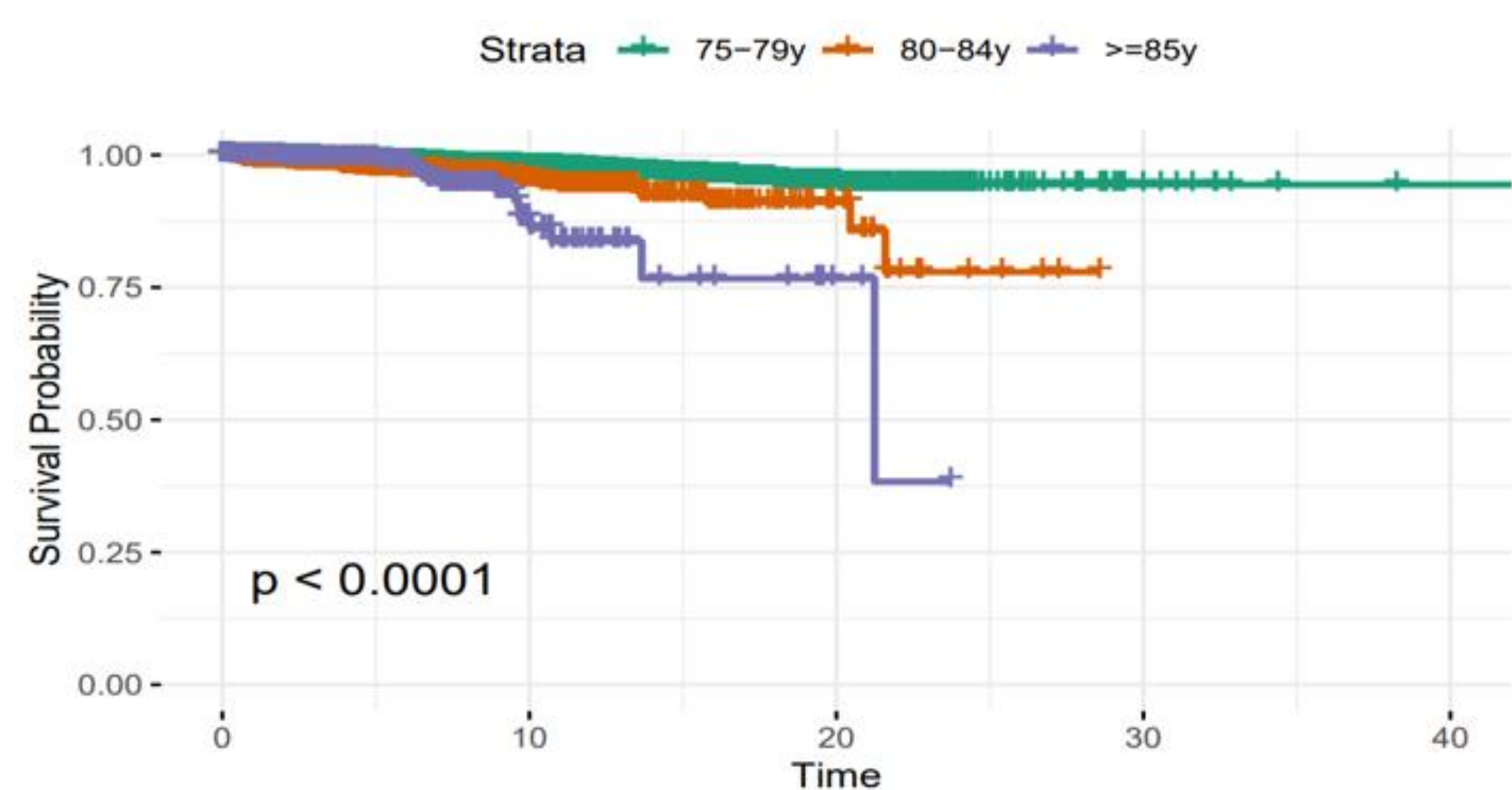


Figure 1: Kaplan-Meier Survival Curve by Age Category

## CONCLUSIONS

- PCCRC presents a clinical challenge in people aged  $\geq 75$  years.
- Risk factors for PCCRC, such as previous colonoscopy outcomes (e.g., advanced neoplasia), can help guide the development of future non-invasive surveillance strategies in this increased risk older population.

## References

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