

Rising colorectal cancer incidence in the under 50s in Australia; Is it time to revisit the guidelines for screening?

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Background

Colorectal cancer (CRC) remains the second most common internal malignancy affecting Western civilisation. In Australia, there are approximately 15,000 new cases per year. Screening (faecal occult blood tests) between the ages of 50-74 remains the primary widespread method to detect CRC. The idea of screening starting at age 50 has been around for 30 years. However, the incidence of CRC is increasing in the under 50s, and global patterns show a rise in colorectal cancer in the under 50s in Germany, USA, Australia, Canada, New Zealand, UK, Denmark, Slovenia, and Sweden. This project aimed to examine the incidence of colorectal cancer in the under 50s across Australia and also to investigate whether patients aged under 50 are presenting with later-stage cancers and/or cancers with more aggressive pathology.

Methods

CRC incidence data was obtained from publicly available sources and Cancer Registries/Cancer Councils in all states and territories in Australia. Additional stage data was obtained from Cancer Council Victoria. Detailed patient data was obtained from the colorectal neoplasia database on patients undergoing surgery between 2010 and 2021 at Cabrini and The Alfred hospitals. Multiple statistically analyses were carried out on the data, including Fisher's exact tests, t-tests, and Cox regression survival analyses. Abbreviation: American Society of Anesthesiologists (ASA).

Figure 1. Change in incidence of CRC in Australia and Victoria in recent years

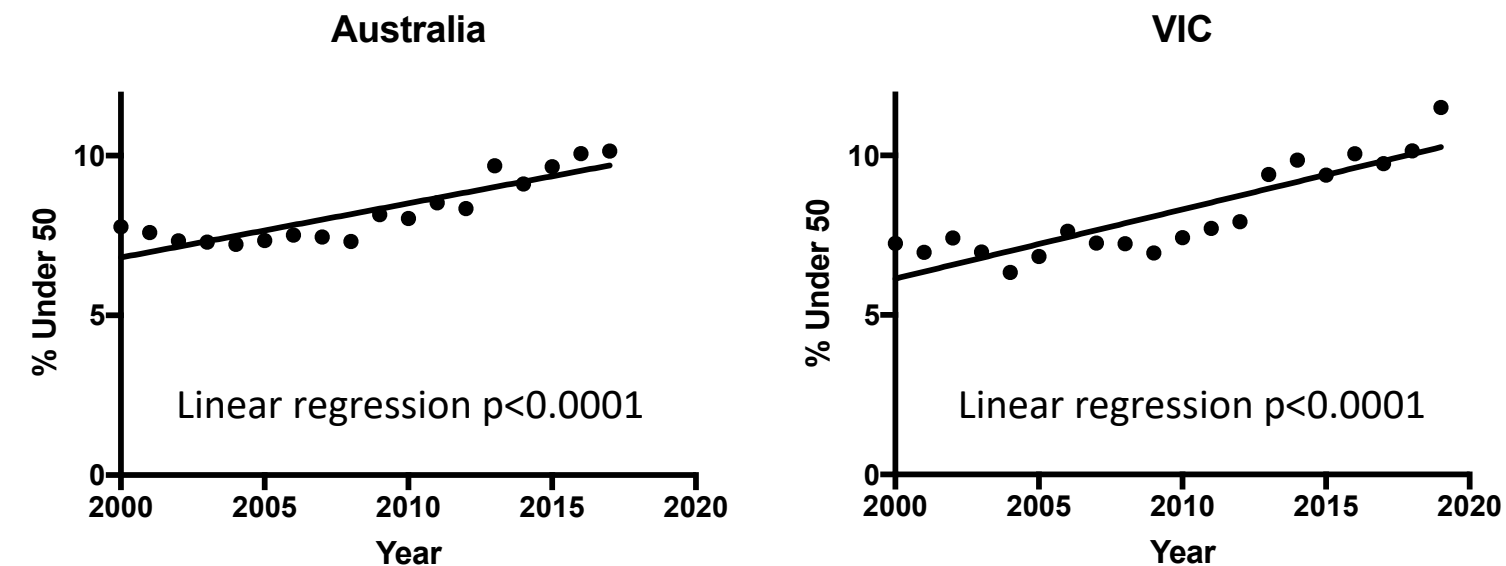


Table 1. Selected clinicopathological features (Fisher's exact tests)

Variable	Under 50	Over 50	p-value
Male gender	170 (49.0%)	1751 (51.0%)	0.464
ASA 3	47 (13.6%)	1307 (38.3)	<0.001
ASA 4	7 (2.0%)	192 (5.6%)	<0.001
Rectal cancer	215 (62.0%)	907 (26.5%)	<0.001
Stage III	108 (31.3%)	817 (23.9%)	<0.001
Stage IV	55 (15.9%)	332 (9.7%)	<0.001
Lymphovascular Invasion (LVI)	120 (34.6%)	1008 (29.5%)	0.049
Positive lymph nodes	144 (41.5%)	996 (29.1%)	<0.001
Adenocarcinoma	243 (70.0%)	2516 (73.8%)	0.003
Adenocarcinoma Signet cell	6 (1.7%)	27 (0.8%)	0.003

Results

The incidence of CRC in the under 50s is significantly increasing across Australia (7.7%-10.1%; Figure 1) and in VIC (7.2-11.5%; Figure 1). Similar significant increases were seen in NSW, QLD, SA, and WA. In VIC, between 2004-2019, the proportion of stage IV cases in the under 50s increased from 18.5% to 29.1% (p=0.0019). When comparing under 50s to over 50s at Cabrini/Alfred hospitals, gender (Table 1), surgical urgency, surgical entry, and 30-day mortality were not different. Under 50s had better general health with fewer ASA 3 or ASA 4 category patients (Table 1; p<0.001). However, the pathology for the under 50s was different. Significantly more rectal cancers were observed in the under 50s (62% vs 26.5%), more advanced stage (stage III and IV), more positive lymph nodes, more LVI, and more signet cell adenocarcinoma (Table 1). There were no differences in the 5-year overall survival or disease-free survival between the two age groups.

Conclusions

In Australia, CRC in the under 50s is increasing. Under 50s patients present with more rectal cancers, more advanced cancers, and with more aggressive pathological features. The landscape for screening has shifted in the last 30 years, so the screening age should be lowered to 40 or 45 to catch these cancers at an earlier stage. Studies have shown that this would be cost-effective, and some countries (e.g. USA) are now advocating for lowering the screening age. Australia should consider a similar change to capture these patients.

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