

Table 1 CRC incidence rates in India: trends in younger and older adults over a decade

Age group	2004–2005	2006–2008	2009–2011	2012–2014	Siegel <i>et al</i> ¹ Chennai PBCR 2008–2012
Younger adult					
Both genders	2.7 (2.4–3.0)	3 (2.7–3.3)	3 (2.7–3.3)	3.5 (3.1–3.9)	3.5 (3.2–3.9)
Female	2.8 (2.4–3.3)	2.8 (2.4–3.3)	2.7 (2.3–3.1)	1.6 (1.4–1.8)	
Male	2.5 (2.2–3.0)	3.1 (2.7–3.6)	3.2 (2.8–3.6)	3.8 (3.3–4.5)	
Older adult					
Both genders	18.8 (17.8–19.9)	19.8 (18.9–20.8)	21.1 (20.2–22.1)	22.9 (21.7–24.1)	27.5 (25.9–29.1)
Female	15.8 (14.4–17.2)	16.1 (14.9–17.3)	17.4 (16.3–18.7)	18.3 (16.8–19.9)	
Male	21.7 (20.2–23.4)	23.5 (22.1–25.0)	24.8 (23.4–26.2)	27.5 (25.7–29.4)	

CRC, colorectal cancer; PBCR, population-based cancer registry.

analysed data from 14 PBCRs, representing 65 million people (5% of Indian population).² PBCRs included in our study were Ahmedabad, Bangalore, Barshi, Bhopal, Chennai, Delhi, Dibrugarh, Kamrup, Kolkata, Manipur, Mizoram, Mumbai, Sikkim and Thiruvananthapuram.

We calculated age-standardised incidence rates (according to WHO World Standard Population 2000) for 5-year age groups for periods of diagnosis (2004–2005, 2006–2008, 2009–2011, 2012–2014), and categorised them as younger than 50 years (younger adults) or 50 years or older (older adults) (per 100 000 persons). We obtained relative rates by comparing estimates obtained from 2012–2014 with those from 2004–2005.

The CRC incidence in younger adults in 2012–2014 was 3.5 (95% CI 3.1 to 3.9), a relative increase of 30% over a decade. The CRC rate in older adults was 22.9 (95% CI 21.7 to 24.1), a relative increase of 22% (table 1). Except for a reduction in incidence in female younger adults (–43%), an increased incidence was seen among male younger adults (+51%), and among male and female older adults (+26% and +16%, respectively). In the Siegel *et al*¹ study, the CRC incidence in younger adults in 2008–2012 was 3.5 (95% CI 3.2 to 3.9) and in older adults was 27.5 (95% CI 25.9 to 29.1).

In comparison with the data presented from one PBCR in a study by Siegel *et al*, our analysis of data from 14 PBCRs shows a lower incidence rate in older adults. Since our study focuses on a considerably larger section of Indian population over a longer time period, these results will be a better representation of the CRC incidence rates in India.

Our study highlights the trends in CRC incidence in India. Unlike in Western countries where CRC rates in older adults are falling, incidence rate is on the upswing in India. Similar to patterns emerging in younger adults from Europe and North

America, CRC rates are rising in India as well.

Our findings lead to several questions. We do not know whether the increase in rates is primarily mediated by a rise in rectal cancer versus colon cancer. Due to paucity of longitudinal cohorts, we also do not know whether this is associated with a rise in mortality rates. Systematic or community-based screening of CRC is non-existent in India, and we do not know the impact of an organised screening programme as recommended in Western countries.³ Given that the incidence rates are quite low, it is unlikely to result in even marginal gains in clinically meaningful outcomes.

The findings from our study point to an impending rise in CRC burden in younger adults. It is imperative that healthy lifestyle should be emphasised as a CRC preventive strategy in younger adults. Awareness of symptoms and risk factors for CRC, subsidised access to opportunistic CRC screening in the private healthcare sector, and more importantly improved facilities in public facilities will likely help reduce the burden of CRC in India.

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Colorectal cancer incidence in younger adults in India

Siegel *et al*¹ described patterns of colorectal cancer (CRC) incidence in young adults worldwide. In India, their estimates were based on data from a single population-based cancer registry (PBCR) in the southern Indian state of Tamil Nadu, representing 0.5% of Indian population (Chennai PBCR). India is a large country of more than a billion people. We

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