Young-onset colorectal cancer in the Asia–Pacific region

Moe Kyaw, Joseph JY Sung[1]

Although evidence for increasing incidence has not yet been reported, we should be vigilant

When O'Connell and colleagues published their systematic review of young-onset colorectal cancer (CRC) in 2004,[1] defined as CRC in a person no older than 40 years of age, there had only been one study in the Asia–Pacific region.[2] Several reports have subsequently raised concerns about an increasing incidence of young-onset CRC in this region. If the number of patients is indeed rising, should we respond to this epidemiological problem with new measures?

Strong evidence suggests that the incidence of young-onset CRC is increasing in the United States and Europe, in contrast to a declining incidence in older people. Most of this evidence comes from population-based analyses of data from the SEER (Surveillance, Epidemiology and End Results) registries.[3] In this issue of the *MJA*, investigators from New South Wales suggest that, at least at present, the incidence of young-onset CRC is not increasing here.[4] Different trends in the incidence of young-onset CRC were reported by two earlier population-based studies in Australia.[5,6] The most likely explanations for the disparity in the results of these studies involve differences in the study periods and baseline incidence of young-onset CRC. For the rest of the Asia–Pacific region, only two population-based studies have reported trends for young-onset CRC. An analysis of data from the Hong Kong Cancer registry did not find an increase in the incidence of young-onset CRC during 1983–2006.[7] The second study, analysing data from the Korean cancer registry, similarly found no increase during 1999–2009 in the overall incidence of young-onset CRC relative to older patients, although the incidence of rectal cancer in the younger age group increased.[8]

Over the past decade, several institutional series have been reported across the Asia–Pacific region, highlighting the variable proportion of patients with young-onset CRC among all patients with CRC, from the 6.7% (368 of 5436 CRC patients) reported by a Taiwanese institution[9] to 35.5% (102 of 287) in India.[10] In O'Connell's review of 55 studies in Western countries, about 7% of all patients with CRC were younger than 40 years of age.[1] However, one must be cautious when interpreting data from institutional series. Firstly, the data come from specialised centres, resulting in institutional bias. Patients with polyposis syndromes or a strong family history of CRC are more likely to be treated in secondary and tertiary referral centres. Secondly, many older patients with symptoms of CRC in areas with unfavourable economic status may not seek medical advice, so that the proportion of patients with young-onset CRC is overestimated.

Nevertheless, these institutional series provide valuable information about the characteristics of young-onset CRC in the Asia–Pacific region. In the O'Connell review, young-onset CRC appeared to be more aggressive and to be presented at a later stage of disease. Reports about the clinical-pathological features of young-onset CRC in the Asia–Pacific region are not dissimilar to their Western counterparts. The prevalent anatomic site is the distal colon, and most cancers have more aggressive pathological characteristics (poor differentiation, mucinous, signet ring) and are at a more advanced stage at presentation. What remains unclear is whether genetic and environmental factors (eg, diet, smoking) and even microbiomes are comparable in patients with CRC from Eastern and Western countries.

To advance this discussion we need consensus about the definition of young-onset CRC. Firstly, the age criterion for young-onset CRC varies in the current literature between 40 and 50 years of age. As 50 years is recommended as the time point for initial screening in most countries, it seems logical that young-onset CRC be defined as disease occurring before age 50. Secondly, many previous studies included both "sporadic" and "inherited" forms of young-onset CRC, but it is well established that these two forms of CRC are separate clinical-pathological entities. Sporadic CRC is the predominant form, usually presenting on the left side and in the absence of a family history. Inherited CRC is less common, and occurs as part of well defined hereditary syndromes, such as familial adenomatous polyposis, Lynch syndrome, and juvenile polyposis. The screening and surveillance strategies for these two types would be quite different.

In summary, there is a lack of solid evidence from population-based studies for the increasing incidence of young-onset CRC in the Asia–Pacific region. With many parts of this region exposed to Westernised urban lifestyles, and considering the increasing incidence of CRC in the West, a rise in the incidence of young-onset CRC is likely to be imminent. Population-based screening of younger adults cannot be recommended without more evidence of an increase in incidence and further detailed risk–benefit analyses. We need to identify young adults at particular risk who should be targeted for screening. The only current recommendations are to increase awareness of young-onset CRC among clinicians and the public, and to ensure that symptomatic young patients receive a timely colonoscopy and genetic counselling.

Competing interests: No relevant disclosures.

Provenance: Commissioned; externally peer reviewed. ■

1 O'Connell JB, Maggard MA, Livingston EH, Yo CK. Colorectal cancer in the young. *Am J Surg* 2004; 187: 343-348.

2 Singh Y, Vaidya P, Hemandas AK, et al. Colorectal carcinoma in Nepalese young adults: presentation and outcome. *Gan To Kagaku Ryoho* 2002; 29 Suppl 1: 223-229.

3 Bailey CE, Hu CY, You YN, et al. Increasing disparities in the age-related incidences of colon and rectal cancers in the United States, 1975–2010. *JAMA Surg* 2015; 150: 17-22.

[1]The Chinese University of Hong Kong, Hong Kong, China. ✉ js_vcoffice@cuhk.edu.hk ▪ doi: 10.5694/mja16.00957 ▪ See Research, p. 465

4 Boyce S, Nassar N, Lee CYY, et al. Young-onset colorectal cancer in New South Wales: a population-based study. *Med J Aust* 2016; 205: 465-470.

5 Young JP, Win AK, Rosty C, et al. Rising incidence of early-onset colorectal cancer in Australia over two decades: report and review. *J Gastroenterol Hepatol* 2015; 30: 6-13.

6 Sia CS, Paul E, Wale RJ, et al. No increase in colorectal cancer in patients under 50 years of age: a Victorian experience from the last decade. *Colorectal Dis* 2014; 16: 690-695.

7 Yee YK, Gu Q, Hung I, et al. Trend of colorectal cancer in Hong Kong: 1983–2006. *J Gastroenterol Hepatol* 2010; 25: 923-927.

8 Shin A, Kim KZ, Jung KW, et al. Increasing trend of colorectal cancer incidence in Korea, 1999–2009. *Cancer Res Treat* 2012; 44: 219-226.

9 Chiang JM, Chen MC, Changchien CR, et al. Favorable influence of age on tumor characteristics of sporadic colorectal adenocarcinoma: patients 30 years of age or younger may be a distinct patient group. *Dis Colon Rectum* 2003; 46: 904-910.

10 Nath J, Wigley C, Keighley MR, Perakath B. Rectal cancer in young adults: a series of 102 patients at a tertiary care centre in India. *Colorectal Dis* 2009; 11: 475-479. ■