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TOPIC HIGHLIGHT

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Colorectal cancer screening: Time for action in Iran

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Abstract

Colorectal cancer (CRC) is now the third most common cause of cancer-related deaths in the world. According to the Iranian Annual National Cancer Registration Report, CRC is the third most common cancer in Iranian women and fifth in men. The incidence of CRC has increased during the last 25 years. CRC screening is an efficient way to reduce the burden of CRC through detection of precursor lesions of cancer or early stage cancer. Iran may benefit even more from screening programs. According to recent studies, the prevalence of colorectal adenoma in first degree relatives of patients diagnosed with CRC is significantly higher than in the average risk population. So, appropriate screening strategies, especially in relatives of patients, should be considered as the first step of CRC screening in Iran.

Key words: Colorectal cancer; Screening; Prevention; Relatives; Iran

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Cancer is the third most common cause of death in Iran[1]. Gastrointestinal cancers are the most frequent cancer among Iranian males and second to breast cancer among females[2].

Colorectal cancer (CRC) is a public health burden in most industrialized countries[3] and is now the third most common cause of cancer-related deaths in the world[4]. According to the Iranian annual national Cancer Registration Report, CRC is the third most common cancer in Iranain women and fifth in men. The incidence of CRC has increased during the last 25 years[5]. Iranian data suggest a younger age distribution for CRC compared to Western reports[5-7].

CRC screening is an efficient way to reduce the burden of CRC through detection of precursor lesions of cancer or early stage cancer. The 5-year survival rate of CRC diagnosed early was reported to be around 90%[8,9]. The overall mortality rate of CRC was reduced by 16%, 12 to 18 years after the beginning of cancer screening[10], and the mortality rate of persons aged 50 to 75 years was also found to be reduced[11].

Screening guidelines recommend that average risk individuals initiate CRC screening at age 50 years[12,13], while high-risk individuals should obtain screening earlier[8,12].

Most cases of CRC (around 80%) are probably caused by environmental factors although in up to 5% of all CRCs, genetic factors play a dominant role[14,15]. The most common hereditary syndromes are Lynch syndrome (hereditary nonpolyposis CRC), familial adenomatous polyposis and MUTYH-associated polyposis[16]. So, individuals with a personal or family history of CRC[12], history of polyps[8,12], Crohn's disease or ulcerative colitis[17] are at high risk.

Iran, because of its demographic characteristics, may benefit even more from screening programs. The distribution of CRC has shifted towards lower age groups and, half of Iranian CRC patients are currently aged less than 50 years of age[7].

Although the facts mentioned above, suggest that implementation of screening and surveillance programs should be highly beneficial, the necessity of conducting such programs and the exact methods for performing them should be more thoroughly investigated.

Initially, the epidemiology of CRC and adenomatous polyps can be determined according to data banks, registry systems and research studies. Then, measures should be taken to determine the high risk groups for CRC in order to promote early diagnosis. However, actions should not be confined to determining vulnerable groups and all groups of people who might benefit from screening should be included in programs and the cost-benefit estimated[18].

In an unmatched case control study conducted in our research center, a significant positive correlation was found between the number of affected relatives per family and the risk of CRC, which increased nearly threefold[19]. Another study based on colonoscopy screening showed that the prevalence of colorectal adenoma and precancerous lesions in first degree relatives of patients diagnosed with CRC is significantly higher than in the average risk population[20].

It remains to be determined which method of screening yields a better outcome. Randomized and non-randomized studies are needed to assess the efficacy of screening programs. However, reaching a consensus in this regard may take a long time. So, in the meantime, implementation of CRC screening programs will be a matter of moral decision-making instead of being based on current data.

The prevalence of disease, its hygienic burden, applicability of screening programs and the possibility of early diagnosis, demographic characteristics of the population, availability of treatment modalities for patients with positive screening tests and finally, the cost-benefit of the whole procedure will determine whether or not a program should be conducted.

In conclusion, appropriate screening strategies especially in relatives of patients should be considered as the first step in CRC screening in Iran.

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