Colorectal cancer: A potential risk heightened by Pakistan's vitamin D endemic

Rutaab Kareem, Zuha Majid

Madam, colorectal cancer or CRC is any cancer that starts in the colon or rectum. It is the third most commonly diagnosed form of cancer and the second leading cause of cancer deaths around the world, according to GLOBOCAN DATA 2020.[1] Vitamin D deficiency has long been associated with a higher risk of colorectal cancer[2] along with other risk factors such as obesity, smoking, and alcohol consumption.

Ultraviolet B or UVB rays are the primary source of endogenous vitamin D. Recently, a study using data from 186 countries published in BMJ Public Health[3] has significantly linked lower UVB exposure to a higher risk of colorectal cancer among all age groups and especially among people older than 45 years.

Over half the Pakistani population has vitamin D deficiency and more than a quarter are vitamin D insufficient regardless of age, gender, and location[4] despite receiving sufficient sunlight for over 300 days annually, making cutaneous vitamin D production possible throughout the year. This free source of vitamin D remains widely untapped and underutilized because of various social and cultural factors. "Fair" or untanned skin remains a common beauty standard in Pakistan. Women and young girls, in particular, are highly discouraged from going out into the sun lest their skin gets dark. People also tend to dress conservatively because of social and religious reasons, which also decreases exposure to sunlight. We may attribute the deficiency rates in urban cities to the abundance of air pollutants in cities that absorb the UV rays before they reach the skin.

Physicians should screen patients at high risk of developing CRC for vitamin D deficiency and advise them to increase sunlight exposure, improve dietary habits and use vitamin D supplements. An increase in anti-air pollution efforts and the general awareness of the public about vitamin D deficiency is sorely needed. Physicians and other public figures should emphasize the importance of obtaining vitamin D both through diet and sunlight. Introducing fortifying food acts and increasing supplement availability may also decrease the deficiency. Although it should be kept in mind that increasing vitamin D levels through diet fortification and supplement use may not be practical for all socioeconomic groups because of the high rates of poverty and food insecurity that are prevalent in our country. Thus, we should capitalize on exploiting the ample sunlight that is readily and freely available naturally.

Acknowledgement: None to declare.

Disclaimer: None to declare.

Conflict of Interest: None to declare.

Funding Disclosure: None to declare.

References

1. Sung H, Ferlay J, Siegel RL, Laversanne M, Soerjomataram I, Jemal A, et al. Global Cancer Statistics 2020: GLOBOCAN Estimates of Incidence and Mortality Worldwide for 36 Cancers in 185 Countries. CA Cancer J Clin. 2021; 71:209-49.
2. Zhang L, Zou H, Zhao Y, Hu C, Atanda A, Qin X, et al. Association between blood circulating Vitamin D and colorectal cancer risk in Asian countries: a systematic review and dose-response meta-analysis. BMJ Open. 2019; 9:1-13.
3. Purushothaman VL, Cuomo RE, Garland CF, Mackey TK. Could age increase the strength of inverse association between ultraviolet B exposure and colorectal cancer? BMC Public Health. 2021; 21:1-20.
4. Riaz H, Finlayson AE, Bashir S, Hussain S, Mahmood S, Malik F, et al. Prevalence of Vitamin D deficiency in Pakistan and implications for the future. Expert Rev Clin Pharmacol. 2016; 9:329-38.

Third Year MBBS Student, King Edward Medical University, Lahore, Pakistan.
Correspondence: Rutaab Kareem. Email: rutaabkareem@gmail.com

DOI: https://doi.org/10.47391/JPMA.5076