



## *Letter to the Editor*

# **Colorectal cancer in Saudi Arabia: Moving collectively forward to reduce the risks**

To the editor: The risks cancer poses to the world community in general are alarming and exist in varying degrees from one country to another. The incidence and mortality figures for cancer are striking; in 2012, about 14 million cases of cancer were diagnosed, resulting in 8.2 million deaths. The world health organization's (WHO) 2012 report also indicated a high increase in the incidence of, and deaths from, cancer in comparison with previous estimates from 2008, when 12.7 million new cases and 7.6 million deaths were reported (WHO, 2013). The WHO also expects a 70% increase in the number of cases over the next two decades, including different types of cancers across the world. Further, colorectal cancer is ranked as the most prevalent type of cancer among men and the third most prevalent among women in Saudi Arabia (Sibiani et al., 2002). This high expectation percentage and the prevalence of colorectal cancer raises the question of how prepared scientists, researchers, and educators worldwide are to face this sharp increase in cancer and, in particular, colorectal cancer. What types of measures will be taken to move from recognizing the issue to taking action? This paper aims to highlight the imperative responsibility of all healthcare providers, educators, and scientists to constantly improve the health and well-being of their service populations.

Colorectal cancer is one of the major causes of morbidity and mortality not only in Saudi Arabia but also throughout the world. It affects both men and women at almost similar rates. Specifically, it accounts for about 9.4% of all cancer incidences among men and 10.1% among women (Haggar and Boushey, 2009). However, the incidence rates of colorectal cancer vary across countries, and it is particularly more common in developed countries, accounting for 63% of all cases. For example, it is highly prevalent in Australia, New Zealand, Canada, the United States, and some European countries, and it has a lower prevalence in China, India, and parts of Africa and South America (Haggar and Boushey, 2009). However, Haggar and Boushey (2009) claimed that some bias could be present in terms of incidence rates because cases could be underreported in developing countries.

While colorectal cancer is considered the most prevalent type of cancer among men in Saudi Arabia, no accurate estimates of its prevalence have been

presented recently. The most recent estimates for colorectal cancer were reported in 2005 by the Saudi Cancer Registry (SCR). At that time, colorectal cancer was the second most common type of cancer among Saudis of all age groups and was the most common among men. Another factor that complicates this issue was indicated by Aljebreen (2007), who found that in most of the cases presented from 1995 to 2005, the patients were in the advanced stages of the disease.

However, the alarming and constantly increasing incidence of cancer, including all types of cancer in general, is recognized in the country of Saudi Arabia and in the Gulf region, and this was recently discussed in a medical research conference conducted in Riyadh in October 2014. The most striking issue that was addressed was the prediction of a sharp rise in the incidence of cancer in Gulf countries to almost double the current figures by 2030, which far exceeds the predictions for cancer rates in other countries. Generally, scientists across the world came to the agreement that some factors that have contributed to the increase in the incidence of cancer are related to heavy tobacco use; unhealthy, high-fat, low-fiber diets; a lack of physical activity; and obesity.

The exact cause of colorectal cancer is still unknown; however, some factors can increase the risk of its incidence, such as family history, age, chronic inflammatory diseases of the colon, diabetes, and race, e.g., African Americans are at a higher risk (American Cancer Society, 2014). People are at higher risk of having colorectal cancer if they have a family history of the disease, as the gene mutations or abnormalities can be transmitted to the members of the family. It is noteworthy that these mutations increase the risk significantly of having cancer but do not directly cause cancer. The most common types of inherited colon cancer syndromes are familial adenomatous polyposis (FAP) and hereditary non-polyposis colorectal cancer (HNPCC), which can be detected through genetic testing. The occurrence of colorectal cancer within the same family could not be related to genetic mutations; it could be related to a shared diet, lifestyle factors, exposure to environmental carcinogens, or a combination of both genetic and environmental factors (American Cancer Society, 2014). Although family history is an important risk factor, it only accounts for 15 to 50% of colorectal

cancer cases, while most cases are considered "sporadic," which means there is no previous family history of the disease.

Having known the alarming prevalence of colorectal cancer in the world in general and in Saudi Arabia in particular, as well as the risk factors that lead to the incidence of the disease, we need to move practically and scientifically toward improving the efforts to manage and decrease its incidence. From my perspective, I believe that the appropriate interventional initiatives start from our recognition of the risk factors; therefore, healthcare providers, educators, and scientists should work collectively to increase public awareness of these risk factors through launching educational campaigns. Scientists need to evaluate constantly the effects of educational programs on public awareness and provide recommendations for improvement. The importance of the early detection of the disease and regular screening should be emphasized in all educational initiatives, as early detection will increase the chances of successful treatment and a full recovery. Therefore, information about the warning signs of colorectal cancer should be included in all educational programs. Many studies, e.g. Zhang and Li, 2013 indicated the significance of screening in decreasing the rates of colorectal incidence, which enabled early detection and the removal of precancerous polyps.

To date, research projects in the field of cancer in general and colorectal cancer in particular are progressing toward finding the exact causes of the disease, as well as toward scientific methods for improving treatments and preventing incidence. For example, scientists have been able to develop new tests to view different genes activities in colorectal cancer, which can help predict prognosis, specifically, which patient is at a higher risk of having that cancer spread. In addition, it has been found that gene changes can affect the efficiency of certain treatments, such as chemotherapy (American Cancer Society, 2014; Zhang and Li, 2013). As part of the international scientific efforts toward managing, treating, and preventing the incidence of colorectal cancer, scientists at King Abdullah International Medical Research Center in Saudi Arabia are making strides in the advancement of knowledge in this field, such as with a newly published scientific study conducted by Aziz et al. (2014) to identify colorectal cancer driver genes using a patient-specific comparison of a cytogenetic microarray. Their findings are illuminating, as they identified 144 genes to form the list

of driver genes, and 24 genes on this list are significantly associated with colorectal cancer (please consult that paper for more details). I would conclude here by emphasizing the significance of the collective work toward the advancement of knowledge to manage the prevalence of colorectal cancer at the national and international levels. Research initiatives and public educational campaigns would not be possible without sufficient support from governments and healthcare agencies.

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