

EDITORIAL

Cancer: Its Alarming Trends

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The cancer burden is alarmingly rising worldwide, causing significant pressure on the general population and health systems at all economic levels. Globally, cancer is the leading cause of morbidity and mortality regardless of geographical diversity and the level of human development (1,2). The Globocan database compiled by International Agency for Research on Cancer (IARC), estimated that 18.1 million new cancer cases and 9.6 million cancer deaths occurred globally in 2018 (2,3). The global burden of cancer is projected to increase from 13.3 to 21.4 million incident cases between 2010 and 2030 due to demographic changes alone, dominated by a growing burden in low- and middle-income countries (4). This escalation in cancer burden is due to various factors, especially increasing ageing population and exposure to cancer risk factors related to lifestyle changes associated with rapid socioeconomic developments (1-5). Asia accounts for nearly half of the new cancer cases and more than half of cancer deaths. The IARC also estimates that Asia and Africa have a higher proportion of cancer deaths (7.3% and 57.3% respectively) compared with their incidence (5.8% and 48.4% respectively) (2). In low income countries late patient presentation and delay in diagnosis of cancer is common, with many patients presenting only when the disease has reached an advanced or metastatic stage. However, the leading causes of cancer incidence and deaths substantially vary across countries and within each country depending on the degree of socioeconomic development and associated lifestyle factors (1).

According to the Malaysian study on cancer survival (MySCan), cancer is the fourth leading cause of death which contributes to 12.6% of all deaths in government hospitals and 26.7% in private hospitals in 2016. There has been an increasing trend from 11.3% in 2007 to 12.6% in 2016 and approximately there are 37,000 newly diagnosed cancer case every year which is estimated to rise to more than 55,000 cases by the year 2030 (6).

The IARC estimated that one-in-five men and one-in-six women worldwide will develop cancer throughout their lifetime and one-in-eight men and one-in-eleven women will die from their disease (5). Worldwide, the incidence rates and death rates for all cancers combined were higher in men than women. In contrast, the

Malaysian National Cancer Registry reported that the cancer incidences between years 2007-2011 among males were 86.9 and in females were 89.0 per 100,000 populations (6).

Globally when both sexes combined, lung cancer is the most commonly diagnosed cancer (11.6% of the total cases) and the leading cause of cancer death (18.4% of the total cancer deaths) (1). Lung cancer is the leading cause of cancer death among males, followed by prostate and colorectal cancer (for incidence) and liver and stomach cancer (for mortality) (5). The global epidemic of lung cancer is predominantly attributed to cigarette smoking and the disease largely can be prevented through tobacco control.

Among females, breast cancer is the most commonly diagnosed cancer and the leading cause of cancer death, followed by colorectal and lung cancer (for incidence), and vice versa (for mortality); cervical cancer ranks fourth for both incidence and mortality (3,5). Female breast cancer accounts for almost one in four cancer cases among women. Hereditary and genetic factors, including a family history of breast or ovarian cancer and inherited mutations (in BRCA1, BRCA2, and other breast cancer susceptibility genes), contributes to 5% to 10% of breast cancer cases (1). Elevated incidence rates are the consequence of a higher prevalence of known risk factors related to menstruation (early age at menarche, later age at menopause), reproduction (nulliparity, late age at first birth, and fewer children), exogenous hormone intake (oral contraceptive use and hormone replacement therapy), nutrition (alcohol intake), and anthropometry (greater weight, weight gain during adulthood, and body fat distribution); whereas breastfeeding and physical activity are known protective factors (7).

Colorectal cancer cases are estimated to be 1 in 10 cancer cases and deaths (1). Colorectal cancer incidence rates vary widely. The global burden of colorectal cancer is expected to rise from 1.8 million new cases in 2018 to 3 million in 2040 with substantial increases in low and middle-income countries (8). The rises in incidence are due to the influence of dietary patterns, obesity, and lifestyle factors in addition to the recognised risk factors like inflammatory bowel disease, diabetes and family history of colorectal cancer (8). Prostate cancer ranks as

the second most frequent cancer and the fifth leading cause of cancer death in men (1). Globally stomach cancer is the fifth most frequently diagnosed cancer and the third leading cause of cancer death (1). Among men in several Western Asian countries, it is the most commonly diagnosed cancer and the leading cause of cancer death. Helicobacter pylori is the main risk factor for stomach cancer, with almost 90% of new cases of noncardia gastric cancer attributed to this bacterium (9). Liver cancer is predicted to be the sixth most commonly diagnosed cancer and the fourth leading cause of cancer death worldwide in 2018. The main risk factors are chronic infections with hepatitis B virus (HBV) or hepatitis C virus (HCV), aflatoxin-contaminated foodstuffs, heavy alcohol intake, obesity, smoking, and type 2 diabetes (10). The major risk factors vary regionally.

Cervical cancer ranks as the fourth most frequently diagnosed cancer and the fourth leading cause of cancer death in women (1). Cervical cancer ranks second in incidence and mortality behind breast cancer in low- and middle-income countries. Human papillomavirus (HPV) is the major risk factor of cervical cancer (11). Thyroid cancer ranks in ninth place for cancer incidence worldwide and represents 5.1% of the total estimated female cancer burden. The only well-established risk factor for thyroid cancer is ionizing radiation, particularly when the exposure is in childhood, although there is evidence that other factors (obesity, smoking, hormonal exposures, and certain environmental pollutants) may play a role (12).

Bladder cancer is the tenth most common form of cancer globally and the disease is higher among men, among which it is the sixth most common cancer and the ninth leading cause of cancer death. Incidence rates in both sexes are highest in Southern Europe(1). Nonmelanoma skin cancer (NMSC) is the most frequently diagnosed cancer in North America, Australia and New Zealand (1). It has been projected that pancreatic cancer will surpass breast cancer as the third leading cause of cancer death in the future (1).

Cancers of the lip and oral cavity are highly frequent in Southern Asia (e.g. India and Sri Lanka) as well as the Pacific Islands (Papua New Guinea, with the highest incidence rate worldwide in both sexes), and it is also the leading cause of cancer death among men in India and Sri Lanka (1). Kaposi sarcoma is endemic in several countries in Southern and Eastern Africa and estimated to be the leading cause of both cancer incidence and mortality in 2018.

The most common cancers in Malaysia are lung, trachea and bronchus, female breast, colorectal, nasopharynx, prostate, brain and nervous systems, stomach, liver, cervix uteri, ovary, corpus uteri, thyroid, pancreas, leukaemia and lymphoma. These 15 cancers accounted for around three-quarters of the estimated number

of patients diagnosed with cancer in Malaysia for the period between 2007 and 2011 (13).

In 2018, the World Health Organization (WHO) reported that 30-50% of cancer can be prevented by avoiding risk factors and implementing existing evidence-based prevention strategies (2). WHO also reported that one-third of deaths from cancers are due to five leading behavioural and dietary risks; high body mass index, low fruits and vegetable intake, lack of physical activities, tobacco and alcohol use. Tobacco use is the most common risk factor for cancers and is responsible for approximately 22% of cancer deaths (12). Hepatitis B (HBV), Hepatitis C (HCV) and Human Papillomavirus (HPV) are responsible for up to 20% of cancer deaths in low- and middle-income countries. Infections with these agents are potentially preventable through immunisation (2). The other known risk factors for cancer are betel quid chewing, risky sexual behaviour and environmental factors (13).

Based on WHO cancer data it is evident that cancer is a critical global issue and all the countries must augment the key components of cancer control; cancer prevention, early detection, diagnosis, treatment and palliation (14). Generally, in all populations the most urgent priorities in cancer prevention are to helping current tobacco users to quit and young people not to start smoking, along with HBV and HPV vaccinations (4). However, other than tobacco- and virus-related cancers, most of the increase in cancer incidence is not currently preventable, but many cancer cases can be effectively treated upon early diagnosis (2).

To launch a war against cancer, appropriate national cancer strategies with individualised cancer care should be integrated with universal health coverage. The national cancer strategies should be able to project cancer trends, obtain information on cancer risk factors and research agendas for cancer control and prevention. The incidence and impact of cancer burden can be substantially reduced with prevention (4). The major challenge in cancer prevention is the lack of public knowledge regarding cancer and its risk factors. Hence, cancer preventive measures should be focused on adopting knowledge transfer into practice. To reduce cancer burden, early detection, diagnosis and timely treatment is crucial. This can be achieved by better integration, collaboration and coordination from all sectors of society, including government and private sectors as well as the non-governmental and professional organisations.

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