Indian Perspective of Strengthening Priorities in Cancer Prevention: Connecting the Missing Links

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ABSTRACT

It will not be incorrect to say that everything in India is or will be on a boom, be it economy, be it population, be it aging of the citizens, and hence longevity, or for that matter even health care facilities. Thus, it is imperative that national policies should be reformed in such a fashion that we take lessons from the west and correct ourselves when we have time in hand, well almost.

Increase in globalization, and therefore travel, changing habits and lifestyles, all come with a price and the least desired of all is the globalized disease incidences and disease process. Population growth and aging are the largest contributors to the increasing total number of cancer cases and the shift in the burden of cancer and other chronic diseases toward economically developing countries.

Cancer is now the third leading cause of death worldwide. This paper identifies several preventive measures that offer the most feasible approach to mitigate the anticipated global increase in cancer in countries that can least afford it.

Keywords: Cancer, Prevention, India.

INTRODUCTION

Cancer is now the third leading cause of death worldwide, with ≥12 million new cases and 7.6 million cancer death estimated to have occurred in 2007. The number of cancer cases and deaths is projected to be more than double, worldwide, over the next 20 to 40 years; this is despite decreases in the cancer death rates in high-resource countries, such as the USA, Australia and UK.1

Given the magnitude of the projected demographic trends and their disproportionate impact on countries that can least afford increased health care expenditures, preventive measures offer the most feasible approach. Unfortunately, this has not historically been matched by parallel efforts to control the major modifiable risk factors that cause cancer and other chronic diseases.

By 2030, it is projected that there will be 26 million new cancer cases and 17 million cancer deaths per year.2 Global increase in the cancer burden and its disproportionate impact on economically developing countries is a reason for worry and more so for the Indian subcontinent where the economic growth is in competition with the growth in terms of infectious and noninfectious diseases.

The world population in 2008 was 6.7 billion. Barring a catastrophe, this number is expected to increase to 8.3 billion in 20302 and to 8.9 billion by 2050.3 Likewise, the number of people aged 65 and above in low and medium resource countries is expected to increase from 247 million to 982 million between the year 2000 and 2050. This aged population will disproportionately affect the number of people who develop or die from cancer, since almost half (45%) of cancers diagnosed worldwide in 2002 occurred in people above 65 years of age. Even without any increase in the cancer incidence rate, the number of cases anticipated in 2050 (24 million) would be more than twice the number in 2002 (10.8 million). Most of this increase would occur in low- and middle-resource countries.3

TOBACCO AND ITS DISASTROUS EFFECT

Tobacco use is the single largest preventable cause of cancer and premature death worldwide. About 50% of men and 9% of women are currently smokers in developing countries, compared with 35% of men and 22% of women in high-resource countries.4

Over 60% of all smokers in the world live in just 10 countries (in order): China, India, Indonesia, Russian Federation, USA, Japan, Brazil, Bangladesh, Germany and Turkey,5 which makes India the silver medal winner for smoking and true estimates are not authentically available from both smoked and smokeless tobacco, with our unconfirmed estimates this will take India to probably a platinum medal winner. The International Agency for Research on Cancer designates at least 15 different types of...
subtypes of cancer as causally related to smoking. These include cancers of the lung and bronchus (all histological subtypes), larynx, oral cavity, pharynx, lip, nasopharynx, nasal cavity and paranasal sinuses, esophagus (squamous and adenocarcinoma), bladder, kidney (parenchymal and renal pelvis), pancreas, uterine cervix, stomach, liver and acute myeloid leukemia.

In many developed countries, trends in smoking, and more recently in smoking cessation, have been so extreme that they have dominated national trends in cancer mortality and have been the major driver in the downturn in death rates from all cancers combined in these countries. Progress in reducing male lung cancer rates was achieved principally by smoking cessation among adult men. Unfortunately, cessation rates are much lower in large developing countries like India and China. Despite this bleak picture, much progress can and is being made to reduce tobacco smoking, a number of interventions have proven to be effective in reducing the demand for tobacco products and in changing social norms about smoking. Tax policies that raise the price of tobacco products are the single most effective approach for reducing demand.

Price increases are an especially powerful deterrent against the initiation of smoking in youth and motivation for addicted smokers to quit. Smoke-free laws that prohibit smoking in public places substantially reduce non-smokers exposures to secondhand smoke. Public awareness about the harmful effects of tobacco on health can be increased by requiring prominent, graphical warnings on cigarette packaging and by educational campaigns aimed at health professionals. In India, over 60% of male physicians smoke, compared with 66.9% of the general male population.

Counseling about smoking cessation can be integrated into other public health and health care delivery programs, such as tuberculosis, human immunodeficiency virus (HIV)/AIDS, family planning and maternal health programs. No single country can successfully combat the resources of the international tobacco companies. Thus, nations have united behind the Framework Convention on Tobacco Control (FCTC), the first health treaty negotiated under the auspices of the World Health Organization (WHO). The FCTC provides a framework for national legislation and enforcement of tobacco control measures. The FCTC was promulgated in May 2003 in response to the global tobacco pandemic with the objective of substantially reducing the worldwide prevalence of tobacco use and exposure to tobacco smoke.

DIET, OBESITY AND PHYSICAL INACTIVITY

Like tobacco, obesity, physical inactivity and poor nutrition are established causes of several types of cancer. Rapid increases in the prevalence of obesity (defined by WHO as body mass index 30 in adults) have occurred in the USA since the 1970s and more globally since the 1980s. The trend toward overweight and obesity is even greater in children than in adults and has occurred not only in high-resource countries but also in urban and even rural areas of many low and middle income countries. A host of various cancers, like breast, colon and esophagus are being linked to increased adiposity. Hence, concrete interest in identifying policy measures to help people maintain a healthy weight throughout life is important before this becomes endemic in countries like India and China, and other South East Asian countries.

CANCERS RELATED TO CHRONIC INFECTIONS

Persistent infection with various microbial organisms accounts for 18% of cancers worldwide. The most common malignancies caused by chronic infections are cancer of the uterine cervix, stomach and liver, caused by HPV, Helicobacter pylori and HBV and hepatitis C (HCV) virus respectively. Kaposi’s sarcoma (KS) caused by human herpes virus 8 (HHV-8), nasopharyngeal cancer and certain lymphomas from Epstein-Barr virus (EBV), bladder cancer from Schistosoma haematobium, leukemia from human T-cell lymphotropic virus and biliary tract cancer from onchocerciasis. Virtually, all cases of cervical cancer result from recurrent cervical infections with HPV. In addition to cervical cancer, HPV infection is associated with vulvar carcinoma, some oral carcinomas, penile carcinoma and anal carcinoma. Recently developed cervical cancer vaccines have the potential to prevent HPV infection; however, effective vaccines against HPV infection are too costly to be available in high-risk areas.

KS, HHV-8 AND HIV

Only one of the four subtypes of KS is associated with AIDS. The AIDS-related KS has identical histopathology to the other subtypes; it is more probable to involve multiple lesions and worse prognosis. It is now thought that infection with HHV-8 (also known as KS-associated herpes virus), rather than the AIDS virus itself, is the principal cause of KS. The most effective methods for preventing KS are those that protect against exposure to HIV and HHV-8. Preventive behaviors include sexual abstinence, sex only with an uninfected partner, consistent and correct condom use, abstinence from injection drug use and consistent use of sterile equipment by those unable to cease injection drug use.

HIV, EBV AND NON-HODGKIN’S LYMPHOMA

It is estimated that there were 3,00,000 new cases of non-Hodgkin’s lymphoma (NHL) worldwide in 2007. NHL is an extremely varied group of neoplasm. Some forms of NHL, including Burkett’s lymphoma, are associated with EBV. Most people are infected with EBV at sometime in their lives. When infection occurs during adolescence or young adulthood, it causes infectious mononucleosis 35 to 50% of the time. EBV infection is also associated with some AIDS-related NHL and Hodgkin’s lymphoma. Since EBV is transmitted through contact with saliva, and may be present in saliva of healthy people, due precautions in this respect are advisable, dental surgeons should be more cautious and observe adequate sterile precautions and prevent cross contaminations.
CONCLUSION

In summary, preventive measures provide the only feasible approach to slow and ultimately reverse the global increase in cancer and its disproportionate impact on countries that can least afford it. We have emphasized why national and international efforts to strengthen tobacco control and to make childhood vaccination against HBV and HPV universally available and affordable in countries where these infections are prevalent should be among the highest priorities. Successful implementation of these programs will require both national leadership and international collaboration to overcome the economic and political barriers that often impede public health. Breaking the nexus and motivating agencies involved in both tobacco control and universal childhood vaccination have been proven to be highly effective and cost-effective in countries across a wide range of economic development. Both have the potential to provide the greatest benefit at lowest cost.17

REFERENCES