

## EDITORIAL

## Cancer scenario in India and its comparison with rest of the world and future perspectives

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Cancer remains the scourge of mankind, lets us not delude ourselves. Despite recent advances in molecular biology and very advanced techniques leading to early detection of malignant tumours and despite newer drugs and use of nanotechnology an adjunct measures for targeted therapy, cancer remains the most deadly enemy and killer of mankind. Thus cancer remains the single most factor for increase mortality and morbidity of human being as well as for entire nation, impacting its manpower and economy. It is this vicious cycle that needs to be controlled, broken and irradiated which at present appears to be a herculean tasks although not an impossible one.

#### Regional variation

There are numerous studies which shows that the incidence of cancer as well as mortality rate varies world over, according to geographical location. GLOBOCAN, which is the standard set of global estimates of cancer incidence and mortality produced by International Agency for research on Cancer (IARC), have released data for 2018, which recorded 18.1 million new cases of cancer and 9.6 million cancer related deaths worldwide.(1) The report further predicts an increase in new cancer to be 15.1 million and cancer related death to be 12 million by the year 2020.(1,2) Their data shows that

Asian region have highest number of cancer deaths (57.3%) followed by Europe (20.3%), America (14.4%) and Africa (7.3%). The incidence of cancer in Asia is highest in North East Asian region. India is the country that accounts for 7.8% of global cancer incidence, Africa that is likely to rise in future according to GLOBOCAN.(1)

#### Common cancers

According to the report GLOBOCAN 2018, the five most common cancer in the world are Lung cancer (11.6%) followed by cancer of breast (11.6%), colorectal (10.2%), prostate (7.1%), cervix uteri (3.2%). The corresponding mortality rate of these tumours according to report as depicted in [Figure1]. However according to GLOBOCAN 2018, number of new cases of five most common tumours in India are Breast cancer (14%), followed by cancer of lip (10.4%), cervix uteri (8.4%), lung (5.9%) and stomach (5%).(3)

Lung cancer is one of the commonest cancer worldwide with incidence and mortality of 11.6% and 18.4% respectively. However in India lung cancer constitute 6.9 % of all new cases and mortality due to lung cancer is 9.3%.(4) Prevalence of lung cancer in Uttarakhand is around 17.23 %.(5) It can be seen from the above that lung cancer in India is lower down in order as compared to breast cancer.

Whereas the reality in more developed parts of the world is just the opposite. GLOBOCAN 2018, has reported 2.1 million new cases of breast cancer globally.(1) In India it ranked as the commonest cancer type with mortality rate of 12.7 per 100,000 women.(6) In the state of Uttarakhand also the breast cancer is the commonest tumour in females while laryngeal cancer is the commonest in males. Apart from above mentioned five major types of cancer oral cancer account for nearly 30% of other cancer type in India with high mortality rate, so much so that India is now considered to be global epicenter for oral cancer.(1,7,8)

### **Risk factors**

Cancers are known to have multifactorial etiology. They can be broadly been classified in two groups, environmental and genetics. There are numerous studies from different parts of world that have shown high risk factors associated with cancer to be:(9)

1. Smoking
2. Alcohol
3. Exposure to carcinogens (chemical physical, biological)
4. Infection (Viral)
5. Diet and life style

Literature shows many scientific studies that are found correlation between diet and cancer. Tumours of colon, prostate, bladder, stomach and oral cavity are impacted by diet consisting of fat and red meat that subsequently release heterocyclic amines. Bio-phenols released in plastic containers are also very harmful and cooking at high temperature which reduces amount of vitamin C in the food.(9)

Tobacco use in any form is implicated in causation of lung cancer, oropharyngeal cancer and urinary bladder cancer, because tobacco contains polycyclic amines, aromatic hydrocarbons, nitro amines and aromatics amines which have scientifically proven role in tumourogenesis.(10) According to report by Indian Council of Medical Research (ICMR) tobacco related cancer counts for 30% of all cancers in men and women in India. Overall mouth cancer followed by lung cancer are the commonest in India and tobacco related cancer accounts for 42% of all male deaths.(10)

Studies on colorectal cancers by Lo Conte (2018) show that 5.6 % of new colorectal cancer and cancer related death can be attributed to alcohol consumption in Europe. The culprit here is the metabolic product of ethanol mainly acetaldehyde

and free radicals which are responsible for carcinogenesis. Alcohol also remains high risk factor for cancer of oral cavity, larynx, esophagus, liver and breast.(1) In the study from India colon and rectum cancer incidence was seen to be linked less to alcohol and more to dietary risk.(3)

The above points show that there is variation in incidence of cancer region wise. The incidence is also influenced by environmental factors such as diet which in turn is influenced by socio-economic status and prevalent cultural believes.

### **Need of hour**

The global increase in frequency and mortality, as well as the poor prognosis of most of the cancers, has intensified current research efforts in the field of prevention and early detection of this disease. India is undergoing rapid urbanization resulting in life style change, dietary change and environmental degradation. These are burning factors for future cancer scenario in India. So, it is need of time to focus on cancer prevention. Government and non-government organizations as well as all form of media can play vital role in spreading awareness message about cancer cause and its prevention. Early detection can only be possible by effective and efficient screening programme. Early detection and diagnosis, awareness and availability and affordability of treatment are basis tools to crash the cancer burden. According to data of National Health Interview Survey, one in four cancer survivors has a decreased quality of life due to physical and psychological problems. WHO also emphasis on physical, psychological and spiritual needs of patients to improve quality of life. Therefore, the discipline of Palliative care also needs to be popularized and strengthened to tackle these problems.

### **Conclusion**

Cancer is most common cause of death after cardiovascular disorder worldwide. There is diversity of type and incidence of cancer is different in between and within the world region and is because of geographical variation, socio economic status and life style. India is country of genetic homogeneity, but diverse geographically, socially, religiously and economically. As per GLOBOCAN data sheet there is high prevalence and annual increment of new cases. Lung cancer, breast cancer and colorectal cancer accounts for one-third of all cancer mortality. It has highest prevalence rate in South Central Asia. Areas

which are inaccessible and lack awareness should be taken in to consideration to reduce this annual increment of new cases. An appropriate and integrated cancer control programme with aim of cancer awareness education and screening test should be organized to reduce incidence rate and increase survival rate of cancer patients.

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### Figures

**FIGURE 1 GLOBAL DISTRIBUTION OF CASES AND DEATH FOR COMMON CANCERS IN 2018. SOURCE GLOBOCAN 2018**

