

CANCER CONTROL PROGRAMME IN INDIA: CHALLENGES FOR THE NEW MILLENNIUM

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INTRODUCTION

Of the 10 million new cancer cases seen each year worldwide, 4.7 million are in the more developed countries and nearly 5.5 million are in the less developed countries. Although the disease has often been regarded principally as a problem of the developed world, more than half of all cancers occur in the developing countries. In developed countries, cancer is the second most common cause of death, and epidemiological evidence points to the emergence of a similar trend in developing countries ⁽¹⁾.

Cancer is currently the cause of 12% of all deaths worldwide. In approximately 20 years time, the number of cancer deaths annually will increase from about 6 million to 10 million. The principal factors contributing to this projected increase are the increasing proportion of elderly people in the world (in whom cancer occurs more frequently than in the young), an overall decrease in deaths from communicable diseases, the decline in some countries in mortality from cardiovascular diseases, and the rising incidence of certain forms of cancer, notably lung cancer resulting from tobacco use ⁽²⁾.

The impact of cancer is far greater than the number of cases alone would suggest. Regardless of prognosis, the initial diagnosis of cancer is still perceived by many patients as a life-threatening event, with over one-third of patients experiencing anxiety and depression. Cancer can be equally if not more distressing for the family, profoundly affecting both the family's daily functioning and economic situation. The economic shock often includes both the loss of income and the expenses associated with health care costs.

Cancer prevalence in India is estimated to be around 2.5 million, with over 8,00,000 new cases and 5,50,000 deaths occurring each year due to this disease in the country ⁽³⁾. The common sites for cancer in India are oral cavity, lungs, oesophagus and stomach in males and cervix, breast and oral cavity among females. Over 70% of the cases report for diagnostic and treatment services in advanced stages of the disease, resulting in poor survival and high mortality rates ⁽⁴⁾. The disease is associated with a lot of fear and stigma in the country.

Government of India developed the first statement on cancer control as early as 1971. The National Cancer Control Programme for India was formulated in 1984 with four major goals:

1. Primary prevention of tobacco related cancers.
2. Early detection of cancers of easily accessible sites
3. Augmentation of treatment facilities, and
4. Establishment of equitable, pain control and palliative care network throughout the country.

21 Regional Cancer Centres (RCCs) have been established under this programme. Cancer care facilities are also available in a number of Medical Colleges and some private and charitable hospitals in the country. The programme however has mainly contributed to the development of radiation oncology services rather than making any headway in the direction of prevention and early detection. There is no organised screening programme for any of the common cancers in the country. Most cancer centres provide only opportunistic screening services.

Approaches to Cancer Control

There are four principal approaches to cancer control:

1. Prevention
2. Early Detection
3. Diagnosis and Treatment
4. Palliative Care.

Strategies for Cancer Prevention in India

Prevention should be the key element in any disease control programme. Prevention means eliminating or minimizing exposure to the causes of cancer, and includes reducing individual susceptibility to the effect of such causes. This approach offers the greatest public health potential and the most cost-effective long-term method of cancer control. Tobacco is the single leading cause of cancer worldwide and in the fight against cancer every country should give highest priority to tobacco control ⁽²⁾.

Educating people regarding the disease will help to drive away the fears and stigma associated with

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the disease. It is important to involve all levels of the population in the educational process. The contents of cancer education should focus on, tobacco control, physical activity and avoidance of obesity, healthy dietary practices, reducing occupational and environmental occupational exposures, reducing alcohol use, immunization against hepatitis B virus, safe sexual practices to avoid human papilloma virus infection.

A variety of methods that can be employed for educating people e.g.

1. Conducting drawing and essay competitions - School Children
2. Debates, discussions, seminars and street play competitions - Youth and University students.
3. Participatory workshops and training sessions. NGO groups, Municipal, District and State Health Administration.
4. Structured training and field activities - Medical Colleges
5. Participatory programmes on radio and television - Mass Media.
6. Descriptive articles in newspapers and magazines - Mass Media.
7. Exhibitions and public lectures - General Population

Well-illustrated audiovisual educational materials are extremely useful in literate and as well as illiterate populations. While health-education is an interesting method of communication, it should be clearly understood that education is a process, which goes through the modalities of changes in knowledge, attitudes and practices over a period of time and it takes a long time before the impact of education becomes evident.

Strategies for Early Detection of Common Cancers in India

The cancers of the oral cavity, uterine cervix and female breast are very amenable to early detection. Periodic examination by Pap smear and Mammography are the accepted standards for early detection of cervix and breast cancers in the developed countries. Pap smear and mammography are however not practical and affordable methods for cervix and breast cancer screening in India.

Screening for Cervix Cancer

In many developed countries a decline in the incidence of and mortality due to cervix cancer has been observed in the past 30 years due to cytology screening^(5,6). Cytology based screening programmes are difficult

to organise in India because of issues related to absence of trained manpower, infrastructure, logistics, quality assurance, frequency of screening and costs involved. Visual inspection of the cervix after application of 4-5% acetic acid (VIA) is a simple, inexpensive test that can be provided by trained health workers. The accuracy of VIA to detect cervical neoplasia has been extensively studied and found to be satisfactory⁽⁷⁻⁹⁾. Results from pooled analysis of data from two completed studies indicated an approximate sensitivity of 93.4% and specificity of 85.1% for VIA to detect CIN 2 or worse lesions; the corresponding figures for cytology were 72.1% and 91.6%. The efficacy of VIA in reducing incidence of an mortality from cervical cancer and its cost-effectiveness is currently being investigated in two cluster randomized controlled intervention trials in India. One of these studies (n=150000) is a 4-arm trial addressing the comparative efficacy of VIA, cytology and primary screening with HPV DNA testing. This trial will provide valuable information on comparative detection rates of CIN 2-3 lesions⁽¹⁰⁾. The Tata Memorial Hospital has been involved in the last six years in the search for viable and effective alternate screening methods for the early detection of cervix cancer. A study conducted by the Tata Memorial Hospital on 4000 women at Mumbai has shown that VIA and VILI (Visual Inspection of the Cervix after application of 1% Lugol's Iodine), had a Sensitivity (64 - 75%) that was equal to or better than that of conventional cytology (65%). The Specificity was however poor (83-85%) as compared to conventional cytology (98%). A combination of VIA and VILI yielded a slightly better test with a sensitivity of 78.8%, specificity of 82.1%, PPV - Positive Predictive Value of 8.7% and a NPV - Negative Predictive Value of 99.4%, indicating that the VIA-VILI combination test may be an acceptable simple technological tool for cervix cancer screening in resource poor countries like India⁽¹¹⁾.

Screening for Breast Cancer

Although it is established that screening by Mammography can substantially reduce mortality from breast cancer, especially in women over the age of 50 years⁽¹²⁾, breast cancer screening programs involving imaging techniques are expensive and for this reason cannot be adopted in developing countries as a routine public health measure. Economic constraints of Mammography apart, compared to the west, a relatively large proportion of breast cancers in India occur in younger women (reflecting not only a younger age structure of the Indian population but also the observation of lower risk in post-menopausal women as compared to that in western women). Published studies suggest that Mammographic

screening may not be as effective in women under the age of 50⁽¹³⁾.

It has been suggested that breast cancer would be best tackled through an early detection programme using Clinical Breast Examination (CBE) performed by trained paramedical personnel such as female health workers⁽¹⁴⁾. A recently published review of the effectiveness of CBE found indirect support for the effectiveness of this modality of screening. The study emphasized the importance of the technique and quality of the examination. Although screening by clinical examination by itself does not rule out breast cancer, the high specificity of certain abnormal findings greatly increases the probability of breast cancer⁽¹⁵⁾. It has been argued that screening by CBE can be potentially as effective as screening by Mammography⁽¹⁶⁾. The only randomized trial which has compared CBE with CBE + Mammography was unable to demonstrate any added benefit of mammography over CBE alone⁽¹⁷⁾. It has been suggested that given the socio-economic realities of a developing country such as India and the unsuitability of mammography, CBE may be an attractive screening procedure⁽¹⁴⁾.

Tata Memorial Hospital has been involved in a randomized controlled trial (n=150000) which compares the efficacy of health education and Clinical Breast Examination (CBE) provided by trained primary health care workers with just health education provided by the same workers in women aged 30-6-years living in the slums of Mumbai. This study has now entered its 6th year and 3rd round of screening. The study already shows a good compliance-to-screening rate (70%) and down staging is already evident. The principal objectives of the study i.e. demonstration of a reduction in incidence and mortality will however become evident only after another 10-15 years.

Screening for Oral Cancer

There are no international standards of methods or practices for early detection of oral cancers, simply due to the fact that these cancers are mostly found in developing countries, particularly South Asian Countries. Simple oral examination with adequate light is a fairly good screening method for the early detection of pre-cancerous lesions of the oral cavity e.g. Leukoplakia, erythroplakia, non-healing ulcers and oral sub-mucous fibrosis. Oral examination followed by indirect/ direct laryngoscopy if needed is the standard procedure followed at Tata Memorial Hospital. Smokers are also routinely investigated for pulmonary lesions by simple x-ray of the chest. However, the only randomized controlled trial to

evaluate the efficacy of screening in reducing oral cancer mortality, currently ongoing in Thiruvananthapuram, Kerala, has shown after two screening rounds that there is no difference in oral cancer related mortality rates in the study and intervention groups⁽¹⁸⁾.

The feasibility of the alternative methods of screening mentioned above by horizontal integration into the existing health care services at the primary care level is yet to be ascertained. Comprehensive cancer care facilities are also far from adequate even at some of the regional cancer centres today. Even the best screening program is a complete waste without adequate treatment backup. Therefore a strong emphasis on health education and providing opportunistic screening services may be the most cost effective option for cancer control in India for the present.

Model Cancer Control Program

The Tata Memorial Hospital has started a comprehensive cancer control program in the backward Ratnagiri and Sindhudurg districts of Maharashtra. This program proposes to cover the eligible population of these two districts with two rounds of screening for oral, cervix and breast cancers at two-year intervals. Trained primary health care workers will perform screening and the treatment of the screened positive cases will be carried out locally at a NGO Hospital at Chiplun in Ratnagiri, the BKL Walavalkar Hospital. This program, which was started in August 2003, is an 'Xth-plan Project' of the Department of Atomic Energy will be completed by March 2007 and is expected to form a model for district cancer control programs in the country.

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INDIA'S COMMONEST CANCER IS A KILLER

Lung cancer is the most common cancer amongst men in India, points out an information booklet produced by the Cancer Patient Aid Association (CPAA). An estimated 33,000 new cases come up every year in the country.

Symptoms of Lung Cancer

- Unexplained chronic cough
- Sputum mixed with blood
- Fatigue
- Repeated attacks of lung infection
- Constant chest pain
- Breathlessness, wheezing
- Loss of appetite or weight loss

Treatment Options

“The three common modes of cancer treatment are surgery, radiation therapy and Chemotherapy. Surgery is one of the most commonly used modes of cancer treatment wherein the surgeon removes a localized tumour. When the person removes an entire lobe of the lung, the procedure is called lobectomy. Pneumonectomy is the removal of an entire lung”, says the CPAA booklet.

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