

BREAST CANCER: - RISK FACTORS, INCIDENCE, MORTALITY AND SOCIAL FUNCTIONING IN INDIA

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Abstract—Breast cancer is the most common cancer in the women worldwide. It represents nearly one-fourth of all the cancers in women. It is a type of cancer that develops in the breast cells. It forms in either the lobules or the ducts of the breast and fatty or fibrous tissues within the breast. It can also travel to the lymph nodes of the arch. The global burden is expected to cross 2 million by the year 2030 though the incidence rate is lower in India than UK but mortality rate is higher in it. Breast cancer is more prevalent in the metropolitan cities as compared to the rural India. The reasons include demographic, reproductive, anthropometric and life style factors. Advanced stage diagnosis is attributed to the lower levels of awareness, cumbersome referral pathways to the diagnosis and treatment and incomplete regimens. The first sign is usually a new lump in the breast that has never been before. The diagnostic test that help in screening of breast cancer are mammogram, ultrasound and breast biopsy. Despite the long standing National Cancer Control Programmes due to decreased awareness and decreased early detection, these cases continue to increase resulting in the increase mortality ratio. Barriers being low cancer awareness, presence of stigma, fear, gender inequality and reduced engagement in screening behaviour like self examination of breast. In this paper, we will discuss the definition, causal factors, risk factors and risk reduction options and social functioning in breast cancer patients.

Introduction

Worldwide, in females the breast cancer is the most common form of cancer. It represents nearly one fourth of the all cancers in women. Global burden is expected to cross 2 million by year 2030, with increase in cases from the developing countries. Though incidence rate in India is lower than UK (25.8/1000 v/s 95/1000). But mortality rate is higher than UK (12.7 v/s 17.1/1lac). Incidence rate in India shows 3 to 4 fold variations across country, with highest rates seen North East and in metropolitan cities like Delhi, Mumbai, Kolkata.

Cancer occurs due to mutations take place in genes that regulate the cell growth. These mutations let the cell divide and multiply in an uncontrollable way. The cancer that develops in the cells of the breast is called the breast cancer. Typically it forms in either the lobules or ducts of the breast. These uncontrolled cancer cells can often invade the healthy breast tissue and can travel to the lymph nodes of the arms.

From these lymph nodes which are the primary pathways they can move to other parts of the body.

Analysis of breast cancer among women in Delhi, Mumbai, Chennai and Bangalore between 1982 and 2005 by the Indian Council of Medical Education and Research, revealed that number of breast cancer have more than doubled in last 10 years.

Breast Cancer Incidence and Mortality

In 2012, about 145000 Indian women were diagnosed with breast cancer. About one fifth of total mortality was due to the breast cancer. It was seen that the overall survival rate is generally lower in India than other developed countries. The major risk factors for the breast cancer include individual factors like race and ethnicity, overweight and obesity, physical inactivity, alcohol use and smoking, first degree relatives with breast cancer and women with increased breast density. Reproductive risk factors include early age at menarche, null parity late age at the first, and lack of breast feeding, oral contraceptives uses, menopause status and menopausal hormone therapy.

The incidence of breast cancer is highest in the continents of Northern America, Australia/New Zealand, and Northern and Western Europe, while in Africa and Asia the incidence is comparatively low. The highest number of the breast cancer cases in India is found in Thiruvananthapuram, Chennai, Delhi and Mumbai. Studies have shown that 5 year survival rates are approximately 90% in America and 60% in India. The incidence of breast cancer in population below 50 years of age has doubled as compared to 25 years ago along with an increase in mortality of the breast cancer by approximately 13% as compared to 5 years back. Almost 45-50% of patients in India present in advanced stages as per another study. Every 4 minutes, in India one woman is diagnosed with breast cancer. In every thirteen minutes one woman dies with breast cancer. An estimated 70,218 women died of breast cancer in India in year 2012, the highest in the world in that year. The mortality rate is high due to the lack of awareness and delay in screening and diagnosis.

More than 50% cases of breast cancer patient cases in India are suffering from stage 3 and 4 where chances of survival are extremely low. India sees the spurt in the cases of breast cancer in the age group of 30-50 and the same is likely to increase. Breastfeeding often interrupts periods, which results in fewer menstrual cycles and less oestrogen exposure, leading to about 4.3% reduction in the overall risk of breast cancer for every 12 months of breast feeding. According to the National Institute of Health breast cancer survivors are at an increased risk of osteoporosis, as oestrogen has a protective effect on bones and reduced oestrogen levels can trigger bone loss.

Risk Factors in Breast Cancer

Risk factors can be divided in 3 categories:-

- Non modifiable Factors
 - Gender: simply being a woman is the main risk factor for the development of breast cancer. It is more common in women than in men (rarely seen in men).
 - Ageing: breast cancer risk increases with the age. Around 1 out of 8 invasive breast cancers are found in women less than 45 years of age while 2 to 3 invasive breast cancers are found in women aged 55 or more.
 - Family history or genetic risk factors: about 5-10% is thought to be hereditary, resulting directly from genetic defects called mutations inherited from parents.
 - BRCA 1 (Chromosome 17) and BRCA 2 (Chromosome13) mutations: inheritance of mutated genes (BRCA) increases the risk for breast cancer. This may be as high as 80% for members of families with BRCA mutations.
 - Personal history of breast cancer: a women having cancer in one breast has a 3 – 4 fold increased risk of developing cancer in other breast or in the same breast.
 - Race and ethnicity: white women are slightly at more risk than the African- American women. However in women less than 45 years age breast cancer is more common in African American.
 - Dense breast tissue: they have more granulation tissue and less fatty tissue, so having high risk of breast cancer.
 - Certain benign breast condition: this condition has increased risk of breast cancer.
 - Menstrual periods: early menarche i.e. age less than 12 years and late menopause i.e. age greater than 55 years have slightly higher risk of breast cancer due to longer lifetime exposure to estrogens and progesterone hormone.
- Modifiable risk factors
 - Previous chest radiation: as a treatment for another cancer significantly increase the risk for breast cancer if given during adolescence.
 - Having children: women who have no children or having 1 child after age of 30 have a slightly increased risk of breast cancer. Having many pregnancies and becoming pregnant at young age reduces the risk as pregnancy reduces lifetime menstrual cycles thereby reducing the risk.
 - Recent oral contraceptive use: in women who are using daily oral contraceptives are at increased risk.
 - Hormone therapy after menopause: using combined hormone therapy after menopause increase the risk of breast cancer.
 - Breast feeding: it may slightly lower breast cancer risk if breast feeding is continued for one and half year to 2 years.
 - Alcohol Use: those women who have 2 to 5 drinks daily are about 1.5 times more risk of getting breast cancer than non alcoholic.
 - Overweight or obese: especially for women after menopause there are increased chances of getting breast cancer. Having more increased insulin levels in body so there is increase risk of getting breast cancer.
 - Physical inactivity: those who have 1.25 to 2.5 hours of brisk walking per week are found to have less chances of getting breast cancer by about 18% according to World Health Initiative.
 - Factors with uncertain, controversial or unproven effect on breast cancer risk
 - Diet and vitamin intake: high fat diet can lead to being overweight which in turn increase the risk of breast cancer.

Antiperspirants having parabens, bras, induced abortions, breast implants, chemicals in the environment like DDE and PCBs, tobacco smoke, night work and stress are some of the controversial and unproven risk factors for getting breast cancer.

Risk Reduction Options in Breast Cancer

- In all risk patients
 - Breast self examination: once a month adult women should self examine their breasts.
 - Imaging Mammograms: these are recommended for women age 40 to 74 years every 1 to 2 years.
 - Yearly breast examination by the health care provider.
- In very high risk patients
 - Women with gene mutation have a 40 to 60% chance of developing breast cancer. In these cases, surgery is the only option available.
- Intermediate risk patient
 - For some women, taking an oestrogen blocking medication can decrease the risk of developing breast cancer.

Some risk factors we can modify are as follows:-

1. Having an active lifestyle i.e. eat a healthy diet of fruits, vegetables, whole grains, and lean meat.
2. Exercise regularly i.e. at least 180 minutes a week which includes brisk walking and aerobics.
3. Limit the intake of alcohol as more than 1 glass of alcohol per day increases the breast cancer risk.
4. Breast feed your baby.

SOCIAL FUNCTIONING

From a social work perspective it means the fulfilment of an individual's roles that exists as a result of individuals interactions with his/her own self, family, society and environment in order to perform tasks essential for daily living. Women with breast cancer include household, family, social, community, self care and occupational activity. In other words, the concept of quality of life is our social functioning.

Cancer and cancer treatment may cause physical impairment that affects the functioning of the patient as well as vocational, psychological, economic and social problems. Chemotherapy and radiation therapy can compromise a person's social functioning. The ability of performing everyday task and activity reduces due to the psychological distress of the breast cancer patients. Due to the side effects of the cancer treatment which includes nausea, pain, fatigue people are unable to plan for their future and get disengaged from previously appealing activities. It leads to limitations in performing daily activities. Cancer treatment leads to limitations in performing daily activities like driving, walking, household work, family activities and self care. Diagnosis and treatment can rob people of family and social roles which causes emotional distress for all the involved people as a result person suffering from it become bad tempered, depressed and fear of pain and death.

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