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AN INVESTRIGATION ON BREAST CANCER KNOWLEDGE IN DEVELOPING NATIONS

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Abstract
The most common malignant tumor in women diagnosed globally, breast cancer is the leading cause of cancer-related death. Globally, the prevalence of breast cancer is continuously increasing. Breast cancer is the most prevalent type of cancer in the world. Hereditary and genetic predispositions are among the risk factors linked to the incidence of breast cancer. Breast cancers come in a wide variety of forms. The molecular characteristics of breast cancer, including hormone receptor activation (PR, ER, and HER2) and human epidermal growth factor receptor 2 (HER2), genetic changes (BRCA1/2 and phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit alpha [PIK3CA] mutations), and immune system markers (PD L1, tumour-infiltrating lymphocytes [TIL], and programmed death-ligand 1 [PD L1]) may impact treatment approaches.
Keywords: Breast cancer, Tumour, PR, HER2, TIL, PDL

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Introduction

Breast cancer is a very mutual type of cancer in women; breast cancer is categorized by the uninhibited growth of abnormal cells in the milk production glands of the breast or in the channels (ducts) that deliver milk to the nipples. Cancer is a chief cause of morbidity and mortality in developing and established countries like Asian countries, America, Africa, Australia, etc. In several low-income and middle-income countries, including India, most of the population.

Methodology

Clinical trials or meta-analyses and guidelines of major professional societies. The indices of major medical and oncology journals were comprehensively reviewed for articles published from January 1, 2013, to November 11, 2018, on the topic of breast cancer treatment(1). Articles agreed on by both authors to define modern practice were included.

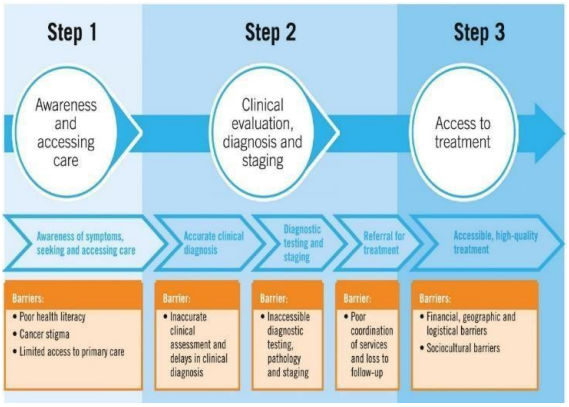

Fig-1; Methodology of breast cancer barriers

Step.1: -Awareness and accessing care
Step 2: -Clinical evaluation, diagnosis and stages
Step 3: -Access to treatment
Methodology of Breast Cancer Barriers

- Cancer Stigma
- Limited Access to Primary Care
- Inaccurate Clinical Assessment and Delays in Clinical Diagnosis
- Inaccessible Diagnostic Testing, Pathology and Starting
- Poor Coordination of Services and Loss to Follow-Up
- Financial, Geographic and Logistical Barriers
- Sociocultural Barriers

Epidemiology

Breast cancer is the most mutual malignant tumour in women in the world. Breast cancer patients account for as much as 36% of oncological patients. An estimated 2.089 million women were diagnosed with breast cancer in 2018. Almost half of the cases on a global scale are in developed countries. This trend is mainly due to the so-called Western lifestyle, associated with a poor diet, nicotinic, excessive stress and little physical activity(2).

In the case of breast cancer, macrography has become recognized as screening. The greatest value of mammography is observed in the group of women aged 50–69 years. Classical mammography is characterized by 75–95% sensitivity and specificity at the level of80-85%. whose proteins are involved in DNA repair through homologous repair, show an autosomal-dominant inheritance pattern (loss of function > missense). *BRCA1* and *BRCA2* mutations are associated with an average cumulative risk of developing breast cancer by the age of 80 years of 72% and 69%, respectively; the relative risk of breast cancer in men harboring *BRCA2* mutations is 6%.

History of breast cancer

Ancient Egyptians were the first came to know the disease more than 3,500 years ago. In 460

B.C., Hippocrates, the father of Medicine, described breast cancer as a humoral disease. Human body is formed of four sense of humor blood phlegm yellow bile and black bile. opium, castor oil liquor ice, sulfur, sulfur, salves, etc. the medicinal therapy of the breast cancers(3)

physician Francois de la Beo Sylvius, he hypothesized that cancer did not come Frequency of breast cancer in women was due to lack of sex10.Ramazani said that without regular sexual activity, reproductive organs, including the breast may get deactivate or destroyed and develop cancers. Again, another researcher Friedrich Hoffman of Prussia postulated that women who had regular sex but still developed cancer were practicing vigorous sex. This could be leading to lymphatic blockage. Later, many research has been done by many scientists on breast cancer and its treatments.(16)

After many research scientists suggested that surgical removal of the tumor could help to treat breast cancer. By the mid-nineteenth century, surgery was the available treatment for breast cancer.(17)

Risk factors

Known risk factors for breast cancer in men are listed in It is well established that incidence rates rise steadily with age. In the United States, men are 5 to 10 years older than women on average at the time of diagnosis, but in other parts of the world such as the Middle East and South Asia, the age gap is smaller.

Fig-2; Factors of breast cancer

Many studies found that breast cancer caused due to the combination of many diseases in women. Most of the cancer cases are found in the women who are older than 50.the major risk factors that may cause Breast cancer is as follows-

- Getting older- The risk of breast cancer increases with age; most breast cancers are diagnosed after age 50.
- Genetic mutations- Inherited changes (mutations) to certain genes, such as BRCA1 and BRCA2. Women who have inherited these genetic changes are at higher risk of breast and ovarian cancer.
- Early menstrual period- Women who start their periods before age 12 are exposed to hormones longer, raising the risk for breast cancer by a small amount.(18,19)
- Late or no pregnancy- Having the first pregnancy after age 30 and never having a full term pregnancy can raise breast cancer risk.(20)
- Late Menopause -If you have a late menopause (after the age of 55) this increases your breast cancer risk compared to women who have an earlier menopause.
- Obesity -Older women who are overweight or obese have a higher risk of getting breast cancer than those who have normal weight.
- Having dense breasts- Dense breasts have more connective tissue than fatty tissue, which can sometimes make it hard to see tumors on a mammogram. Women with dense breasts are more likely to get breast cancer.
- Using combination hormone therapy- Taking hormones to replace missing estrogen and progesterone in menopause for more than five years raises the risk for breast cancer. When hormones progesterone and estrogen are taken together it increases the risk of breast cancer.
- Taking oral contraceptives (birth control pills)- Certain forms of oral contraceptive pills have been found to raise breast cancer risk.
- A family history of breast cancer- A woman's risk for breast cancer is higher if she has a mother, sister, or daughter or multiple family members on either her mother's or father's side of the family who has had breast cancer. Having a first-degree male relative with breast cancer also raises a woman's risk (4)
- Previous treatment using radiation therapy- Women who had radiation therapy to the chest or breasts (like for treatment of Hodgkin's lymphoma) before age 30 have a higher risk of getting breast cancer later in life.
- Drinking alcohol-Studies show that a woman's risk for breast cancer increases with the more alcohol she drinks.

Smoking – Smoking tobacco also causes the risk factor for breast cancer

Stages of breast cancer

Cancer stage is based on four characteristics:

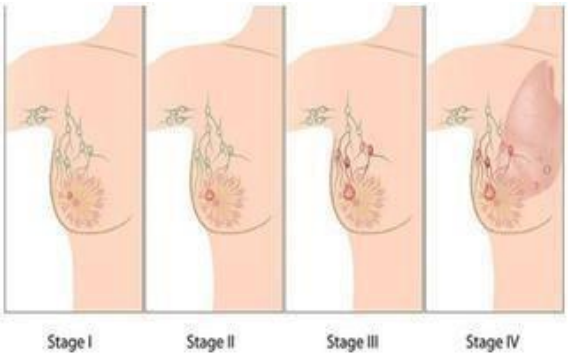

Figure 3: stages of breast cancer

Perhaps due to poor awareness of the disease and diagnostic delays, most (but not all) studies suggest that men are diagnosed with higher stage tumors and have a poorer prognosis overall. One study found that only 29% of 100 Croatian male breast cancer patients were diagnosed within 3 months of symptom onset, far fewer than the 58% of 500 Croatian female breast cancer patients who were diagnosed within the same time frame.

Treatment

Local therapy

Surgical options for men with early-stage breast cancer include breast-conserving therapy and mastectomy. Today, most patients undergo modified radical mastectomy. It is generally assumed that the cosmetic sequelae of mastectomy are not problematic for men, but lumpectomy may be preferable for some, in part because it is a considerably less morbid surgery. [4]

Breast cancer treatment options vary depending on the stage of cancer. There is various ways to treat breast cancer.

They are divided into two – Local

Treatment:

Local treatment is done for localized area meaning only the tumor is treated without involving the other organ of the body. Types of local treatments are-

Surgery:

This is the best treatment option for patients whose breast cancer has not spread to other parts of the body. The types of breast cancer surgery differ in the amount of tissue that is removed with a tumor; this depends on the tumour's characteristics. Some of the most common types of surgery are-[14,15]

Breast-conserving therapy or Lumpectomy:

This involves the removal of the cancerous area, the surrounding tissue and in some cases the lymph node.

A. Partial Mastectomy or Quadrantectomy:

This surgery is done where a larger portion of tissue is removed. Total Mastectomy: This surgery involves the removal of the entire breast, without the removal of lymph nodes.

Radiation Therapy:

It is a treatment in which high-energy rays (such as x-rays) are used to destroy cancer cells. They are divided into two main types

a) External beam radiation:

Radiation comes from a machine outside the body.

b) Internal radiation:

In this method, a radioactive source is put inside the body for a short time.

Systemic Treatment:

Drugs used to treat breast cancer are considered systemic therapies. They are of three types-

Chemotherapy:

Chemotherapy may be given before the surgery (neo-adjuvant) with the aim to reduce tumor size and the need for extensive surgery, or after surgery (adjuvant) to reduce the chances of cancer[5,6]

Hormonal therapy:

Medicines that block or inhibit the actions of the sex hormones estrogen and progesterone are often used in this treatment. It reaches to almost all part of the body not only in the breast.[7,13]

Targeted therapy:

Targeted therapies are a relatively new step for cancer treatment and target specific biological processes that are often essential to tumor growth. Targeted therapy can include the use of antibodies, vaccines and gene therapies[8,9]. These targeted drugs are designed to block the growth and spread of cancer cells. These drugs attack all cells that are growing quickly in the body Management

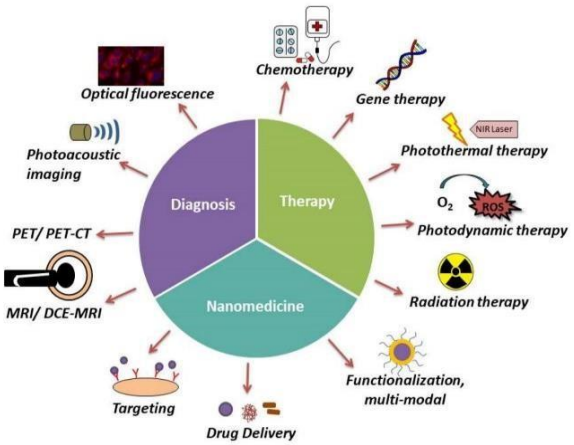

Fig 4; Targeted therapy

In early breast cancer without metastases, women with tumors that are deemed operable undergo surgery. However, most women also need some form of systemic therapy.[10]

Systemic therapy can be given before surgery (neoadjuvant) in women with large tumors for whom reducing the tumor burden is preferred or if information of pathological complete response (per), which is an absence of cancer cells in the surgical specimen after treatment, to pre-s surgical treatment has prognostic value (such as in HER2-positive disease or TNBC[11]).

Moreover, systemic therapy can be given after surgery (adjuvant) if the surgical result or biomarkers indicate increased risk of recurrence.

For systemic therapies, many biomarkers have been validated for therapeutic decision making.

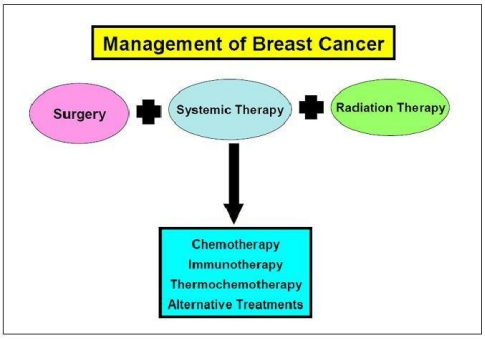

Figure 5: Management of breast cancers

Limitations

This review has several limitations. First, aspects of breast cancer treatment may be institution specific and some of the practice patterns described here reflect the authors' own institution. Second, the practices described are based on drugs approved and available in the United States, and differ internationally.[12] Third, the diagnostic can prognostic statistics provided relate to populations of women in the United State undergoing screening mammography, and may not be applicable to unscreened or international populations.

Conclusion

This page provides a brief explanation of breast cancer, including its history, risk factors, symptoms, incidence of breast cancer in India and throughout the world, and therapies. The information was gathered from a variety of reviews and research articles published in both national and international journals. Breast cancer is mostly brought on by an obstruction of the breast ducts and an excess of the sex hormones progesterone and estrogen. Consequently, it is best to avoid taking high-estragon and progesterone pills or to stop taking them occasionally as they raise the risk of cancer.

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