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## Breast Cancer in Elderly Females

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### ABSTRACT

Breast cancer develops when the breast's cells multiply uncontrollably. Breast cancer ranks as the second leading cause of cancer-related mortality among women. Breast cancer risk increases with age. Almost 1 in 7 women will experience the onset of breast cancer during their lifetime. Breast cancer is a malignant or cancerous tumour that develops from cells in breast tissue. Although they are non-life-threatening and confined to the breast, some women develop benevolent or non-cancerous breast lumps. Many people are unaware they have breast cancer since the early stages of the disease are frequently benign. Early discovery provides more time for evaluation and treatment, which can help prevent negative effects. Self-examination and several diagnostic tools as mammography, ultrasound, and nuclear medicine, are used to evaluate invasive and non-invasive breast cancer. Several therapies associated with breast cancer treatments include chemotherapy, radiation therapy, hormone therapy, and bone-directed therapy. Surgeries can also effectively treat breast cancer, such as lumpectomy and mastectomy. This suggests that effective therapies are progressing. This review aims to determine breast cancer's causes, prevalence, and treatments in elderly women. The authors have discussed the disease's treatment criteria and protocols, such as pharmacological therapies, herbal treatment, lifestyle modifications, and physical activities

### INTRODUCTION

Breast cancer progression arises from the uncontrolled growth of cells within the breast tissue. Breast cancer manifests in multiple forms, with the specific type determined by the origin of cancerous growth in the breast cells (Fahad Ullah, 2019). The second most common cancer in women to be diagnosed in the US is breast cancer (Mojisola, 2023). Although breast cancer can also affect men, it predominantly affects women (Akram *et al.*, 2017). Breast cancer is a life-threatening disease affecting women of any age, although those over 50 comprise most of those diagnosed. Breast cancer affects about 1 in 7 women throughout their lifetime (Fahad Ullah, 2019; Ferlay *et al.*, 2015; Shannon & Smith, 2003). Adolescents and young women rarely develop breast cancer (Shannon & Smith, 2003). Among postmenopausal women, breast cancer contributes to approximately 23% of all cancer-related deaths, making it one of the most prevalent malignant diseases. Furthermore, studies indicate that unmarried women are more likely to develop breast cancer than their married counterparts (Shamsi *et al.*, 2013). In women over 40 and 50, the incidence of breast cancer was higher, with a reported rate of 2 cases per 1000 individuals.

Furthermore, epidemiological research has shown that women with more children tend to have a reduced risk of developing breast cancer compared to those with fewer children. Among all types of cancers, breast cancer has an incidence rate of 10.04% and predominantly affects women in their 40s and 50s. The average age of Iranian women diagnosed with breast cancer is 48 years (Donnelly *et al.*, 2013). Breast cancer is less common before age 20, but its risk increases with age (Zheng *et al.*, 2023). Despite

being a global issue, many women still neglect to perform self-examinations and seek clinical breast examinations, leading to the detection of the disease at advanced stages (Akram *et al.*, 2017).

DNA damage causes cells to develop into cancerous cells. However, hormones also play a vital role in many cases of breast cancer. In a normal cell, when DNA is damaged, the cell has mechanisms to either repair the damage or undergo programmed cell death. However, the damaged DNA is not repaired in cancer cells, yet the cell does not undergo cell death as it should. Instead, it continues to replicate and generate new cells that are unnecessary for the body. The damaged DNA from the original cells is passed on to these new cells. A new lump or tumour is the most frequent indicator of breast cancer (Girish *et al.*, 2014). The risk of malignancy increases with a firm, asymptomatic lump with uneven edges, but breast cancer might be soft, spherical, or sensitive. They might even cause pain. Since breast conditions can be difficult to diagnose, it is crucial to get any new breast tumour, lump, or alteration examined by a medical specialist (Girish *et al.*, 2014). Breast cancer can present with additional symptoms, including skin irritation, dimpling, swelling of the entire breast or a portion of it (with or without a lump), nipple pain, breast pain, nipple retraction, and nipple discharge unrelated to breastfeeding.

This review aims to determine breast cancer's causes, prevalence, and treatments in elderly women.

Abbreviations: National Cancer Institute (NCI); Surveillance Epidemiology and End-Results (SEER); Ductal Carcinoma in Situ (DCIS); Lobular Carcinoma in Situ (LCIS); Invasive Lobular Carcinoma (ILC); Infiltrating Ductal Carcinoma (IDC); Primary Care Physician (PCP);

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Progesterone Receptor (PR); Estrogen Receptor (ER); Ductal Cell Carcinoma in Situ (DCIS); Single Photon Emission Computerized Tomography (SPECT); Positron Emission Tomography (PET); Magnetic Resonance Imaging (MRI); World Health Organization (WHO); Computed Tomography (CT); Hormone Replacement Therapy (HRT), Circulating Tumor Cells (CTCs).

## LITERATURE REVIEW

### Breast Cancer Prevalence and Mortality

The prevalence is anticipated to be less than 0.1 per 100,000 women under 20, 1.4 for women aged 20 to 24, 8.1 for women aged 25 to 29, and 24.8 for women aged 30-34. Childhood breast cancer comprises less than 1% of all cancers diagnosed in children and accounts for less than 0.1% of all breast cancer cases in the general population. According to data from the National Cancer Institute's (NIC) Surveillance Epidemiology and End-Results (SEER) database, in the United States, fewer than 1% and 2.7% of breast cancer patients are under the age of 35, respectively (Shannon & Smith, 2003). Compared to the global statistics, the United States exhibits a higher mortality rate and breast cancer prevalence according to age. In Poland, 17% of sickness cases and 14% of fatalities are brought on by malignant alterations. In 2004, there were 519,000 breast cancer-related deaths worldwide. Each year, approximately 1,208,000 new cancer cases are diagnosed in the United States, leading to the unfortunate demise of 538,000 individuals in the early stages of the disease. These fatalities account for roughly one-fifth of all annual deaths across various causes (Shaukat *et al.*, 2013).

### Breast Anatomy

The breast primarily comprises adipose tissue, a type of fatty tissue. Compared to males, female breasts typically contain a higher proportion of glandular tissue (Aronson *et al.*, 2000). The female breasts comprise 12 to 20 lobes, subdivided into smaller lobules. Through milk ducts, these lobes and lobules are joined together. An intricate network of nerves, blood vessels, lymphatic vessels, lymph nodes, fibrous connective tissue, and ligaments aligns with the breast, which nourishes and supports the adipose tissue within the breast (Tanis *et al.*, 2001). The primary purpose of the female breast is to provide optimal nutrition to newborns (Akram *et al.*, 2017). Nipples and breasts exhibit a wide range of sizes and shapes among individuals. It is common for most women to have one breast that is considerably smaller than the other (Brayboy *et al.*, 2017).

### Breast Cancer and Types

Breast cancer originates from the abnormal growth of breast tissue cells, leading to malignant tumours. However, it is important to note that some women may also develop benign or non-cancerous breast lumps, which are not life-threatening and do not spread beyond the breast. Nevertheless, they enhance a person's risk of

breast cancer (Ely & Vioral, 2007). The intrinsic growth rate of the tumour, age at diagnosis, and various other factors now significantly impact survival. Two types of breast cancers are categorized as invasive and non-invasive (Chinweike-Umeh *et al.*, 2023). One in eight women may develop invasive breast cancer, and one in 33 will die. Although cancer incidence has increased, the death rates have decreased, most likely due to earlier detection and better therapies. Over 2 million women in the United States have received breast cancer treatment (Society, 2007).

### Non-Invasive Breast Cancer

Breast cancer confined to the lobules or ducts where it originated is classified as non-invasive.

**Ductal Carcinoma In Situ:** In this condition, abnormal cells develop within the milk ducts but do not spread to surrounding tissues or outside the body (Akram *et al.*, 2017; Hang *et al.*, 2017). Mammography is the best tool for finding cancer at this stage when nearly all affected women can be treated (Ely & Vioral, 2007). An example of DCIS is ductal comedocarcinoma (Parikh *et al.*, 2018). **Lobular Carcinoma In Situ:** When breast cancer originates in the breast lobules, it is called Lobular Carcinoma in Situ (LCIS). Breast cancer has not invaded the breast tissue lobules (Clauser *et al.*, 2016). Although it starts in the milk-producing glands, LCIS does not penetrate the lobules' walls (Inoue *et al.*, 2017). While LCIS is not considered invasive, it elevates a woman's risk of developing cancer later in life (Akram *et al.*, 2017; Ely & Vioral, 2007).

### Invasive Breast Cancer

Conversely, invasive breast cancer occurs when abnormal cells originating from the milk ducts or lobules extend beyond their original location and invade the surrounding breast tissue (Zipstein *et al.*, 2016). Cancer cells can metastasize from the breast to various body parts through the immune or circulatory systems. This can occur at an early stage when the tumour is small or later when it has grown larger. Invasive breast cancer is the most prevalent type of carcinoma affecting women (Harris *et al.*, 2016). With increasing years, the risk of breast cancer increases quickly.

### Metastatic Breast Cancer

Metastatic breast cancer is disseminated to other organs in the body (Page *et al.*, 2017). The organs most commonly affected by the spread of these cells are the brain, bones, lungs, and liver. As these cells separate and proliferate, they create new tumours in these locations (Prabhakaran *et al.*, 2017).

### Invasive Lobular Carcinoma

It is also known as Invasive Lobular Carcinoma (ILC), a term used to describe a specific type of breast cancer. It originates in the breast's milk-producing glands (lobules) but spreads to other body parts. ILC accounts for approximately 10% of all invasive breast cancers (DeVita, 2005).

### Infiltrating Ductal Carcinoma

Invasive ductal carcinoma is another name for infiltrating ductal carcinoma. It originates in a milk tube or duct, penetrates the duct wall, and invades the breast tissue, from where it can spread to other body regions. Approximately 80% of breast cancers are caused by IDC (Somriari *et al.*, 2003).

### Medullary Carcinoma

Medullary carcinoma of the breast is characterized by forming a well-defined boundary between the normal breast tissue and the medullary tumour tissue (Mateo *et al.*, 2017).

### Mucinous Carcinoma

The mucus-producing cancer cells that cause mucinous or colloid carcinoma are uncommon breast cancers (Anuradha & Lakshmi, 2014).

### Tubular Carcinoma

Women diagnosed with tubular carcinoma generally have a more favourable prognosis compared to those with other types of invasive breast cancer (Priya & Prasaad, 2017).

### Inflammatory Breast Cancer

A highly uncommon and aggressive form of breast cancer known as inflammatory breast cancer manifests as a reddish, swollen breast with dimples and broad ridges because the cancer cells have blocked the lymphatic channels or capillaries in the skin around the breast (Joglekar-Javadekar *et al.*, 2017). When a woman visits her Primary Care Physician (PCP) for medical guidance, she is often prescribed antibiotic medication (Ely & Vioral, 2007). In addition to having ductal or lobular histology, these breast tumours also feature cancer cells that are visible in the skin's lymphatics, which results in an inflamed appearance.

Consequently, certain types of cancer, such as Paget's disease of the breast, Phyllodes tumour, and Triple-negative breast cancer, are comparatively uncommon.

### Paget's Breast Disease

A rare type of breast cancer often presents with noticeable changes to the nipple. Symptoms include the presence of red, itchy rashes around the nipple, which may sometimes extend to the surrounding skin (Merrill *et al.*, 2017). Even though it resembles other skin conditions like psoriasis and eczema, it can be distinguished because those conditions typically affect both breasts. This particular type of breast cancer can initiate from the areola, the pigmented area surrounding the nipple, rather than originating directly from the nipple itself. This condition typically only affects one breast and begins at the nipple of the breast. Paget's illness, which can afflict both men and women, accounts for about 1-3% of all breast cancer cases (Errichetti *et al.*, 2017).

### Phyllodes Tumours

Phyllodes tumours can exhibit benign and malignant characteristics (Sera *et al.*, 2017). In cases where Phyllodes tumours develop in the breast's connective tissues, they can be surgically excised. Phyllodes tumours are highly uncommon and result in fewer than 10 annual deaths among girls in the United States (Strode *et al.*, 2017).

### Triple-Negative Breast Cancer

Triple-negative breast cancer is characterized by the absence of progesterone receptors, human epidermal growth factor receptor 2 (HER2), and estrogen receptor expression. This aggressive subtype is found in approximately 10-15% of cases, predominantly affecting premenopausal women. It is more prevalent in white females and is associated with a lack of ER, PR, and ERBB2 protein expression in cancer cells (Foulkes *et al.*, 2010; Waks & Winer, 2019b).

### Hormone Receptor-Positive Breast Cancer

Around 70% of breast cancer cases are classified as hormone receptor-positive, indicating the presence of either Progesterone Receptor (PR) or Estrogen Receptor (ER) proteins within the cancer cells (Waks & Winer, 2019b).

### ERBB2-Positive Breast Cancer

Around 15% to 20% of breast cancer cases are classified as ERBB2-positive, commonly called HER2-positive breast cancer. These cases exhibit elevated levels of the ERBB2 protein on the surface of cancer cells.

### Stages of Breast Cancer

Breast cancer can be detected in various locations during diagnosis, including the breast tissue, axillary lymph nodes, or distant sites. The staging of breast cancer, categorized from I to IV, depends on the extent of its spread. Metastatic breast cancer is another name for stage IV breast cancer, which signifies that the disease has metastasized to other body parts beyond the breast and axillary lymph nodes (Waks & Winer, 2019a). Based on a breast cancer report, the stage of breast cancer is determined by various factors, including tumour size, type, and depth of infiltration into breast tissues. Non-invasive tumours are categorized as stage 0, while invasive tumours are classified as stage 4.

#### Stage 0

Ductal Carcinoma in Situ (DCIS), which denotes that both cancerous and non-cancerous cells are contained inside the borders of the initial spot in the breast where the tumour formed, is a typical example of this tumour stage. Notably, there is no evidence of invasive growth into the surrounding tissues (Akram *et al.*, 2017).

#### Stage 1

It refers to invasive breast cancer, where a microscopic



invasion of surrounding tissues is still possible. It is further divided into two categories: stage 1A and stage 1B. Stage 1A encompasses tumours up to 2 cm in size without any involvement of lymph nodes, while stage 1B involves the presence of a small cluster of cancer cells larger than 0.2 mm detected in a lymph node (Akram *et al.*, 2017).

### Stage 2

Stage 2 is divided into 2A and 2B. In stage 2A, the tumour is found in the sentinel or axillary lymph nodes but not in the breast. The tumour size can vary, ranging from less than 2 cm to more than 5 cm. On the other hand, stage 2B indicates that the tumour may exceed 5 cm in size, but it has not spread to the axillary lymph nodes. (Moran *et al.*, 2014).

### Stage 3

The classification of this stage has been subdivided into three categories: 3A, 3B, and 3C. Notably, Stage 3B encompasses a type known as inflammatory breast cancer, characterized by symptoms such as redness, warmth, and swelling of the breast skin. Stage 3 breast cancer has three subcategories: 3A, 3B, and 3C. In stage 3A, no tumour is present in the breast, but it can be detected in 4-9 axillary lymph nodes or the sentinel lymph nodes. Stage 3B is characterized by a tumour of any size that has caused swelling or ulceration on the skin of the breast. It can also involve the spread to up to 9 axillary lymph nodes or the sentinel lymph nodes. Stage 3C refers to the spread of the tumour to 10 or more axillary lymph nodes and lymph nodes located above and below the collarbone (Akram *et al.*, 2017).

### Stage 4

The significant spread of the disease to several body organs is evident in this advanced and metastatic stage of cancer, including but not limited to the lungs, bones, liver, brain, and other locations (Neuman *et al.*, 2010).

## METHODOLOGY

In order to execute this review, recent research and review articles/publications based on breast cancer in elderly women were considered. The focus of the investigation revolved around the effectiveness of managing breast cancer in preventing the development of related conditions, such as metastasis, recurrence, and other comorbidities. Data was gathered from electronic databases; Google Scholar, PubMed, Publon, Web of Science, NCBI, Hindawi, National Library of Medicine, ResearchGate, MEDLINE, EMBASE database, Science Direct, Scopus, Cochrane Central Register of Controlled Trials (CENTRAL), and BioMed.

For this study, we searched the literature for articles addressing the causes, prevalence, and treatments for breast cancer in women. Studies were selected from different years ranging between 2017 to 2022 using keywords 'breast cancer,' 'breast cancer types,' 'breast

cancer and mortality,' 'breast cancer treatments,' 'invasive and non-invasive breast cancer,' 'breast cancer stages,' 'chemotherapy in breast cancer,' 'herbal medicine effectiveness.' Search keywords were combined using proximity operators (NEAR, NEXT, WITHIN) and boolean (AND, OR) operators.

First, text words included in the article's title, abstract, and index keywords were examined after databases were searched for relevant papers. Then, across all databases, a second search was conducted using all the discovered keywords, index terms, and MeSH terms for MEDLINE. Third, new studies were found by searching the reference lists of all the studies, reports, and articles. Fourth, databases were searched to identify all related articles and reports in LMICs: PubMed, Google Scholar, and Google. Titles and abstracts were examined for the search terms. Access was made to the whole texts of the articles that were found. This article serves as a review. Therefore, not all information about preventing breast cancer through management strategies has been comprehensively presented in its contents. In contrast, efforts were focused on including the most significant and relevant research.

### Inclusion Criteria

The following addition and omission criteria were used to filter the titles rather than study relevance. We only selected those studies submitted to peer-reviewed journals for approval that were already published. These studies were taken into consideration to understand the research criteria better.

- \* All English-language research published in peer-reviewed publications was included for review.
- \* Studies describing the importance of self-examination for breast cancer were included.
- \* Studies related to care were included.
- \* Reviews of recent developments in breast cancer treatment were focused on.
- \* Studies related to precautions during breast cancer were also considered.
- \* Studies evaluating the diagnosis criteria were also an area of interest.
- \* The study included a case report, a case report with review literature, a literature review, a retrospective cohort study, review articles, and a case-control study.

### Exclusion Criteria

The exclusion criteria involve;

- \* Other than English-language papers were not considered.
- \* Studies focusing solely on the science of breast cancer were excluded.
- \* Papers not aimed at breast cancer treatment and advancement in monitoring were excluded from the review.
- \* The objective was unrelated to breast cancer.
- \* Duplicate studies were excluded.
- \* Studies lacking predefined findings' supporting data.
- \* Studies whose titles were related to the study but

whose text was not relatable were excluded from the review.

## DISCUSSION

Breast cancer is widely recognized as a heterogeneous disease comprising various subtypes that can be distinguished based on their clinicopathological characteristics, prognoses, and responses to treatment. Moreover, its prevalence has increased (Barrios, 2022). The prevalence varies across regions and populations but remains a global public health concern. Annually, over 55,000 women are diagnosed with this devastating illness (KJ & Khamzaeva, 2023). Various factors influence the prevalence of breast cancer. Efforts are made to raise awareness about breast cancer risk factors, promote early detection through regular screenings, and improve treatment options (Prager *et al.*, 2018). Considering breast cancer's significant impact on individuals, families, and societies, it is crucial to prioritize prevention, early diagnosis, and access to quality healthcare services (Basu *et al.*, 2020). By addressing risk factors, promoting education, and advancing research, efforts can be made to decrease the occurrence of breast cancer and enhance the prognosis and well-being of individuals impacted by this disease (Szuhan *et al.*, 2021).

## Risk Factors

The risk of breast cancer is increased by certain factors, including nutritional imbalances, smoking, chronic alcohol consumption, the intake of carcinogenic beverages, occupational hazards, sexually transmitted infections, and specific characteristics related to reproductive health. Other factors may include; age, family history, genetic mutations, hormonal factors, dense breast tissue, previous history of breast conditions, radiation exposure, obesity,

lack of physical activity, and hormonal birth control. The risk can also be increased by reproductive attributes such as early menstrual onset, delayed menopause, never having children, delaying having children until after age 30, and not breastfeeding (Kurbanov *et al.*, 2023). Hormonal factors such as early menstruation, late menopause, Hormone Replacement Therapy (HRT) use, and certain hormone-related conditions can also increase the risk of breast cancer. Breast density can also increase the risk of developing breast cancer (Cullinane *et al.*, 2022). It is crucial to emphasize that one or more of these risk factors does not guarantee the development of breast cancer. Many women without known risk factors still develop the disease, while some with several risk factors never do. Regular screenings, early detection, and a healthy lifestyle reduce the risk and promote overall breast health (Tang, 2022).

## Diagnosis

As a result, the staging procedure develops into a challenging yet essential part of diagnosis and treatment. Women should begin self-examining their breasts at age 20, and routine health checks should include clinical breast inspections. It is recommended for women over 40 to undergo breast cancer screening annually, while for women in their 20s and 30s, screening is typically advised every three years. Additionally, women should know how their breasts typically feel and immediately notify their doctor of any changes. Cancer diagnosis and treatment aim to identify a malignancy before it manifests clinically. There are various breast cancer-specific screening and diagnostic procedures. A few of them are described as follows:

Other diagnosis measures may include; breast biopsy, Magnetic Resonance Imaging (MRI), core biopsy, fine

**Table 1:** Diagnostic Procedures

Diagnostic Tools	Characteristics
Breast Examination	Women should begin self-checks at age 20, and routine health inspections should include clinical breast examinations. Every year for women over 40 and every three years for those in their 20s and 30s (Society, 2007).
Mammography	Mammography is the cornerstone of early breast cancer detection. According to the ACS, women over 40 should have annual mammography screening (Society, 2007).
Ultrasound	Ultrasound uses sound waves to detect whether a mammography problem region is solid or cystic (Ely & Vioral, 2007).
Breast Magnetic Resonance Imaging	Magnetic resonance imaging (MRI) utilizes magnetic fields to generate highly detailed cross-sectional images of tissue structures, offering excellent contrast for visualizing soft tissues (Ely & Vioral, 2007).
Nuclear Medicine	In molecular imaging, patients are administered a radioactive substance known as a radiopharmaceutical, and emission detectors capture and analyze the resulting data. Combining CT with gamma cameras and PET to improve disease detection and localization (Akram <i>et al.</i> , 2017).
Single photon emission computerized tomography (SPECT)	This technique utilizes specific radioactive isotopes, such as technetium-99, gallium-67, and iodine-131, which emit gamma rays. It is a precise and effective scan of the organ of interest (Akram <i>et al.</i> , 2017).

Positron emission tomography (PET/CT)	Positron emission tomography/computed tomography (PET/CT) is considered safe regarding radiation exposure and utilizes positron-emitting radionuclides such as carbon-11, fluoride-18, and oxygen-15. A commonly used tracer in PET is a radioactive form of glucose known as [18F]fluoro-2-deoxy-D-glucose (Akram <i>et al.</i> , 2017).
Estrogen and progesterone receptors	To determine the presence of breast cancer, samples are analyzed to detect estrogen, progesterone receptors, and the HER2 antigen. These tests provide valuable information about the assertiveness of cancer and help assess the suitability of specific medications for breast cancer treatment (Akram <i>et al.</i> , 2017).

needle aspiration, surgical biopsy, and vacuum-assisted stereotactic core biopsy.

### Breast Cancer Biomarkers

Biomarkers are measurable characteristics that can indicate the presence, progression, or response to treatment of a disease like breast cancer. In the context of breast cancer, several biomarkers are used for diagnosis, prognosis, and guiding treatment decisions (Afzal *et al.*, 2022). A breast biopsy or excision is used to diagnose breast cancer, and the disease is staged (Tarighati *et al.*, 2022). Here are some commonly used biomarkers for breast cancer:

- \* Nucleic Acids, Genetic Alterations, and Protein Molecules
- \* Hormone Receptor Status; Estrogen Receptor and Progesterone Receptor
- \* Human Epidermal Growth Factor Receptor 2 (HER2)
- \* Ki-67: is a protein associated with cell proliferation
- \* BRCA1 and BRCA2 Mutations
- \* Oncotype DX and MammaPrint
- \* Circulating Tumor Cells (CTCs)

These are just a few examples of biomarkers used in breast cancer diagnosis and management. The specific biomarkers used may vary depending on the individual case and the stage of breast cancer. Biomarkers play a crucial role in personalized medicine, helping to tailor treatment approaches and improve patient outcomes (Afzal *et al.*, 2022).

### Treatment and Therapy

Treatment recommendations can be made after screening and diagnosis are complete. Breast cancer treatment involves a multidisciplinary approach, including radiation therapy, surgery, chemotherapy, and imaging. These different treatment modalities need to be carefully coordinated. Over time, neoadjuvant chemotherapy has played a significant role in improving overall survival rates. It has also facilitated the effectiveness of locoregional treatments such as radiation therapy and surgery, leading to long-term improvements in managing this condition (Cariati *et al.*, 2005).

Furthermore, hormone therapy, bone-directed therapy, and targeted therapy can also be employed (Girish *et al.*, 2014). There are two main types of therapies in treating breast cancer: local and systemic. Local therapy focuses on removing, eliminating, or controlling cancer cells in a specific area. This can be achieved through treatments such as radiation therapy. Surgery is often the initial approach in breast cancer treatment, and the

specific procedures, such as lumpectomy, mastectomy, and reconstructive surgery, are determined based on the extent of the disease and surgical findings.

On the other hand, systemic therapies aim to target and manage cancer cells throughout the body. Systemic therapies include hormone therapy, ovarian ablation used as adjuvant therapy for breast cancer, aromatase inhibitors, brachytherapy, and chemotherapy. Depending on the patient's needs, a patient may receive a single treatment or a combination (Girish *et al.*, 2014). In addition, psychological support and therapies have effectively eased patients' grief and enhanced their quality of life (Akram *et al.*, 2017).

### Medications and Role of Early Detection

As per the World Health Organization (WHO), the primary focus of breast cancer policies is to enhance outcomes and survival rates through early detection. Early detection plays a fundamental role in the effective management of breast cancer. In treating breast cancer, a range of modern medications are prescribed. These medications are carefully selected based on the specific characteristics of the tumour and the individual patient. The aim is to provide personalized and targeted treatment approaches that maximize the chances of successful outcomes (Mary *et al.*, 2012). Individuals at higher risk of developing breast cancer can potentially prevent the disease through medical interventions using antiestrogen medications like raloxifene or tamoxifen. These medications work by blocking the effects of estrogen and reducing the risk of breast cancer development. For individuals with distant metastases, management strategies primarily focus on improving life expectancy and overall survival rates. These strategies involve a comprehensive approach and supportive care to address symptoms and enhance the quality of life (Abdull Razis & Noor, 2013). Moreover, Herbs are considered a natural alternative for treating breast cancer patients since some plants may have components that naturally have the power to treat breast cancer (Zhu *et al.*, 2011).

### Herbal Treatment

Herbs have been explored as a potential natural alternative for treating breast cancer due to the presence of bioactive components that may possess therapeutic properties and have great medicinal promise. (Keshamma *et al.*, 2022). Some plants contain compounds that exhibit anti-cancer activities and have been studied for their potential in

managing breast cancer (Sohel *et al.*, 2023). Alternative medicines with fewer side effects have been developed for breast cancer patients, particularly those with metastatic cancer. Phytochemicals derived from plants are a valuable natural resource for developing anti-cancer drugs, accounting for 70% of the compounds used (Sharma & Gupta, 2015). Further research and clinical trials are needed to validate their efficacy and ensure safety, and healthcare professionals must guide patients regarding the use of alternative medicines (Sohel *et al.*, 2023).

Research into the effects of herbs on breast cancer is ongoing, and several herbs have shown promise in preclinical and early clinical studies. For example, herbs like turmeric (*Curcuma longa*), green tea (*Camellia sinensis*), garlic (*Allium sativum*), and ginseng (*Panax ginseng*) have been investigated for their potential anti-cancer properties (Sharma & Gupta, 2015). Curcumin from turmeric has shown anti-inflammatory and anti-cancer effects, green tea catechins have anti-tumour properties, garlic contains organosulfur compounds with potential anti-cancer effects, and ginseng has been studied for immune-enhancing and anti-tumour activities (Sharma & Gupta, 2015). However, the efficacy and safety of herbs in breast cancer treatment require further investigation in large-scale clinical trials. Herbal remedies should not replace standard medical treatments but may have complementary effects under healthcare professional guidance (Li *et al.*, 2020). Breast cancer patients should consult their healthcare providers before considering herbal treatments to avoid interference with prescribed treatments and potential adverse effects (Sharma & Gupta, 2015).

### Precautions and Preventions

Prevention and precautions are vital in reducing the risk of breast cancer (Howell *et al.*, 2014). Here are some key strategies that can help:

- \* Regular Breast Self-Exams
- \* Clinical Breast Exams
- \* Mammograms; Mammograms can monitor breast cancer at early stages when treatment is most effective.
- \* Hormone Therapy
- \* If there is a significant family history, consider genetic counselling and testing to assess your risk.
- \* Stay informed about the latest research, advancements, and guidelines related to breast cancer prevention and screening
- \* Take medicines on time
- \* Take proper rest

It is important to remember that while these preventive measures can reduce the risk of breast cancer, they do not provide absolute protection. Regular screenings and early detection remain crucial for identifying breast cancer at its earliest stages (González-Jiménez *et al.*, 2014)

### Lifestyle Modifications and Physical Activity

Lifestyle modifications and regular physical activity are important in reducing the risk of breast cancer. The

following strategies may help in maintaining a healthy lifestyle:

\* Maintain a Healthy Weight; Adopting a healthy diet and physical activity can help maintain or achieve a healthy weight.

\* Balanced Diet; Balanced diet provides essential nutrients and antioxidants to reduce breast cancer risk.

\* Limit Fat Intake; Limit fat intake to reduce the risk of breast cancer. High-fat diets, especially from animal sources, have been associated with an increased risk of breast cancer.

\* Regular Physical Activity; such as brisk walking, jogging, cycling, or aerobic exercises, can help lower the risk of breast cancer. Aim for 75 minutes of strenuous or 150 minutes of moderate exercise weekly.

\* Weight-Bearing Exercises; These activities help improve bone health and maintain muscle mass.

\* Limit Alcohol Consumption; Breast cancer risk has been associated with excessive alcohol intoxication. It is recommended to consume alcohol in moderation or not at all.

\* Avoid Tobacco; Smoking is associated with an increased risk of various cancers, including breast cancer. Taking the decision to quit smoking or consciously avoiding exposure to secondhand smoke can substantially reduce your risk of developing breast cancer.

\* Breastfeed if Possible; If you have the opportunity and can breastfeed your baby, It could mitigate the risk of breast cancer.

Lifestyle modifications are beneficial for reducing the risk of breast cancer and overall health and well-being. It is important to consult with your healthcare provider to discuss personalized recommendations based on your specific circumstances (Kerschbaum & Nüssler, 2019).

### Limitations and Strengths

\* The management and treatments discussed in this review do not guarantee the reversal of the disease.

\* Several participants were not tested in this review; the review is based on factual data.

\* The most coherent risk factor of mortality due to breast cancer is increasing age, which has not been extensively discussed.

\* The biggest strength of this review is that very generalized terms have been used in searching strategies to combat vast unrelated data.

\* This review is based on scientifically proven facts.

### CONCLUSION

In conclusion, breast cancer in elderly women is a significant health concern, affecting many individuals. It encompasses various types and stages that require tailored treatment approaches. The expanding knowledge regarding breast cancer pathophysiologic mechanisms has facilitated remarkable advancements in identifying and utilizing biomolecular markers. Moreover, regular screenings and early detection are essential for improving outcomes. Breast cancer in elderly women can be



diagnosed through mammograms, clinical exams, and biopsies. Treatment options include surgery, radiation therapy, chemotherapy, hormonal therapy, targeted therapy, and medications. Lifestyle modifications can help diminish the chance of breast cancer and improve overall well-being. By raising awareness, encouraging early detection, and embracing a healthy lifestyle, patients can strive for improved outcomes and a brighter future in the fight against breast cancer. Elderly women must coordinate with their medical team to develop a personalized treatment plan, considering their unique needs and preferences. In addition, elderly women can actively manage and potentially prevent breast cancer by receiving periodic updates on developments in breast cancer treatment.

### Research Gap

This review aims to address potential research gaps in understanding breast cancer in elderly women, including limited research, age-related factors, screening and diagnostic methods effectiveness, personalized treatment approaches, and supportive care and quality of life. It will explore the challenges faced by this population and identify interventions to improve their well-being and overall outcomes.

### Future Research Directions

Future research directions for breast cancer in elderly women include investigating long-term outcomes, optimal treatment strategies, personalized medicine, geriatric assessment, and health disparities. These areas can help improve treatment strategies, supportive care interventions, and outcomes for this population. Understanding the unique needs and challenges faced by elderly breast cancer survivors can inform supportive care interventions and improve overall well-being.

### Contribution to Knowledge

The reviewed article contributes to knowledge by consolidating and synthesizing existing evidence on breast cancer in elderly women, identifying research gaps, offering novel insights, and providing recommendations for future research and practice. By summarizing various studies and sources, it provides a comprehensive overview of the current state of knowledge. The article also highlights areas where further investigation is needed, offering valuable insights into the challenges, treatment approaches, and outcomes specific to elderly women with breast cancer. The article's contribution to knowledge is essential for informed decision-making and patient care improvements.

### Novelty of Research

The review focuses on breast cancer in elderly women, highlighting unique characteristics, challenges, and treatment considerations. It integrates findings from various sources, including clinical trials, observational studies, and qualitative research, to provide a

comprehensive understanding. The review explores age-related factors, geriatric assessment tools, and quality of life and survivorship outcomes, offering novel insights into the disease's impact on elderly women. By incorporating these aspects, the review contributes to the existing knowledge base on breast cancer in elderly women, offering new perspectives and insights.

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