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Impact Of Physical Activity And Associated Factors On Breast Cancer: A Comprehensive Review

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Abstract
Breast cancer is described as an uncontrollable growth and proliferation of cells that occurs in breast tissues. There are many tumors that are benign in the breast due to soft tissue, which are also considered non-cancerous. For example, fibrocystic changes aren't actually a cancer condition. Breast cancer is the commonest disease worldwide. This is becoming most common disease related to female mortality worldwide. Breast cancer is the deadliest disease in women. Most cancers can be cured through surgery. Clinical methods consider breast cancer to be a heterogeneous disease. The identification of expression profiles for genes has been categorized into two main groups. This group is dependent on estrogen receptors known as ER. The tumors in the breast are associated with estrogen receptor expression that expresses hormone-related factors. In developed countries, the mortality threshold, especially due to breast cancer survivors, is very low. Like lung cancer in developed countries, leading cause of death is becoming breast cancer but not more so, it also causes female deaths in developing countries. There has been some encouragement in the mortality and incidence rates of breast cancer with stable new cases. There is also a decrease in the mortality rate in some high-income and developed areas. However, the opposite occurs in the developing regions of the world. There has also been a decrease in incidents and deaths in the United States and physical activity can affect hormonal concentration and energy balance.
Key words: *Breast cancer, Etiology, Hormones, Mortality rate, heterogeneous disease*

INTRODUCTION

Breast cancer is perceived as a significant malignant diseases found in women, and it is ranked as the second most common carcinoma worldwide. Among all types of cancer, breast cancer is the deadliest type in the world, accounting for 30% of new cancer cases in women. [1-3]. There has been a slight increase of approximately 0.3% each year in the prevalence rate of breast cancer [4], while the five-year survivability of patients of breast cancer is 90%. This rate is higher than the average of 67% for all cancer patients. [5-7]. Almost 5 to 10 percent of breast cancer cases can be credited to hereditary causes, such as mutations in two types of cancer genes in a family history. [8-12].

1.1. Structure of breast

The breast is composed of two main types of tissues, which are stromal, also known as supportive tissues and glandular tissues [13, 14]. The milk-producing glands, referred to as lobules, are present within the glandular tissues. There is also a passage for the flow of milk, which is referred to as ducts. Stromal tissues are composed of fibrous and adipose connective tissues present in the breast. The formation of the chest, including tissues, in the defensive system, known as lymphatic tissue. It will cleanse waste materials and cellular fluids [15-18] (Fig 1a, b).

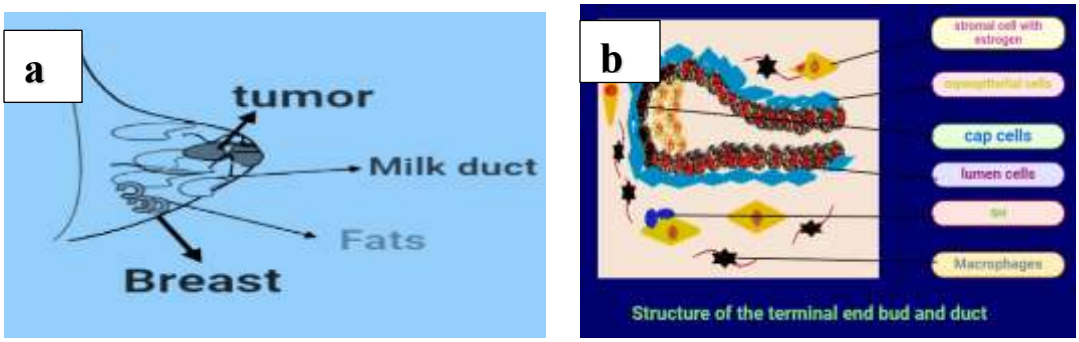

Fig.1.a, b. Structure of breast

1.2 Kinds of breast tumors

Tumors come in various types that develop in different parts of the breast. There are many such tumors that occur due to soft tissue in the breast, which are also considered non-cancerous [19- 20]. For example, fibrocystic changes aren't actually a cancer condition. It leads to the formation of cysts in women that produce fluid. Fibrosis in the breast is known as areas of lumpiness and tenderness or pain, which also involves the growth of tissue like lesions. The onset of breast cancer primarily occurs in those cells that are arranged in rows by ducts [21-24]. Some cells are in the process of forming, which are lined up in lobules. A small number begins in other tissues [25].

1.3 Death rate due to breast cancer

Breast cancer is generally found to be a diagnosable disease. This disease primarily causes death, particularly among women. This type of cancer accounts for 23 percent of the total cancer cases [26-28]. Approximately 14 percent of deaths worldwide are due to breast cancer. Breast cancer is primarily a disease that causes mortality in established countries and is becoming the second rising disease in developing countries. This disease is generally found among women worldwide. It will result in deaths and illnesses. It will rapidly increase over the years. Due to the influence of various significant factors in the emergence of the patient's condition, this cancer has been categorized as a multifaceted disease [29-33].

According to data and a report from the World Health Organization (WHO), it is anticipated that in the coming years, particularly by 2030, Breast cancer rates are rising globally [34-35]. The prevalence of this disease is very high from Eastern Africa to Western Europe. Japan has been excluded from this list; otherwise, the rate of breast cancer is higher in developed countries, while it is lower in developing countries [36]. In developed countries, the mortality threshold, especially due to breast cancer survivors, is very low. Like lung cancer in developed countries, breast cancer is additionally the driving cause of death, but not more, in developing countries [37-39].

There has been some encouragement in the mortality and incidence rates of breast cancer with the stable new cases. There is also a decrease in the mortality rate in higher-income and developed areas [40-41]. However, the situation has been quite the opposite in the developing regions of the world. It has been observed that since 1990, the rate of cancer has been stagnant, with a decrease of 3.5 percent each year from 2001 to 2004. The mortality rate due to breast cancer has decreased by 24 percent. This was done in comparison with two women, one of whom is young and the other has estrogen receptor-positive disease. There has also been a decrease in incidents and deaths in the United States [42-46].

1.4 Risk factors associated with breast cancer

There are certain risk factors associated with a high level of risk for developing breast cancer. These will fall under the category of unmodifiable factors such as age, genetic predisposition, *etc.* [47- 49]. The consumption of alcohol, as well as modifiable factors such as weight gain or obesity and low physical activity, are also present. Observational thinks about show that people who are exceptionally physically dynamic have a lower hazard of breast cancer compared to less dynamic ladies. These components moreover incorporate:

1. Introductory evaluation and screening
2. Late determination
3. Financial and racial incongruities
4. Hereditary and biological variables
5. Access to and quality of healthcare [50-53]

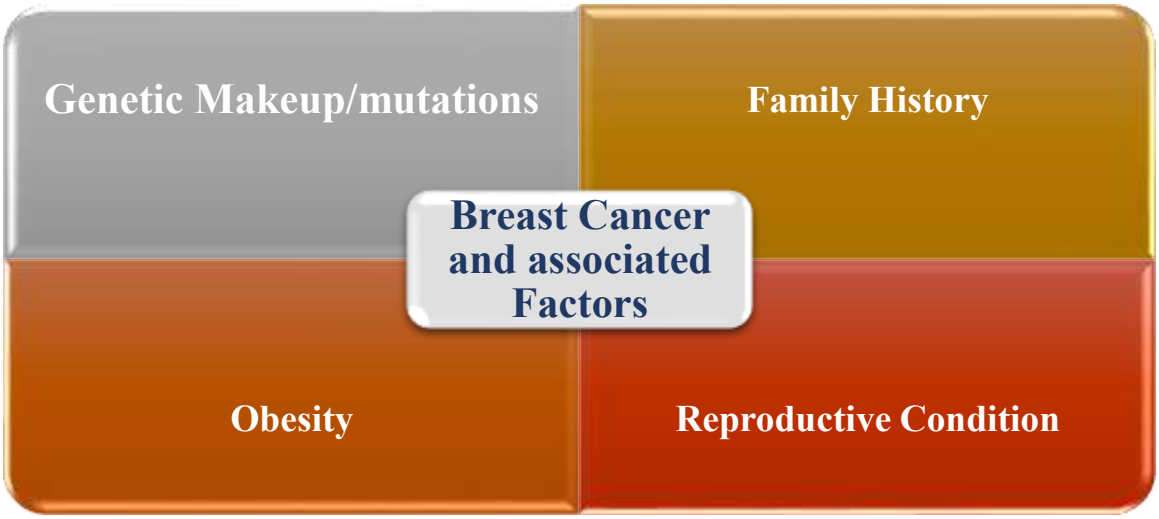

Fig.1.c Factors associated with breast cancer

1.5 Treatment approaches for breast cancer

Different treatments are used to manage breast cancer complications and improve survival. (Table 1) [54-61]

Table 1. Approaches to treat breast cancer

Approaches	Procedure
Surgical Resection	At the outset of breast cancer, surgical removal of the tumor is possible. The earlier the tumor is removed, the higher the survival rate.
Radiotherapy	High-energy radiation are used to destroy cancer cells, which is often used to get rid of leftover cancer tissues after surgery.
Adjuvant Chemotherapy	Chemotherapy is done after surgery to target any remaining cancer cells and prevent the cancer from coming back.
Neoadjuvant Chemotherapy	Chemotherapy is administered before surgery to shrink the tumor so that it can be removed during surgery.
Hormonal Therapies	In cancer treatment, they are used as hormone receptor blockers to help block hormones (such as estrogen) that promote tumor growth.
Monoclonal Antibodies	Using antibodies for targeted therapy, like trastuzumab (Herceptin), is especially effective against HER2 positive breast cancer.
Immunotherapy	This viewpoint makes a difference boost the body's resistant framework to battle cancer and appears guarantee in forceful sorts of breast cancer.
Small Molecular Inhibitors	They target particular molecular pathways included in cancer cell development and survival, giving more successful and less poisonous medications than chemotherapy.
Physical activity	There are many theories that explain how the body reduces the risk of cancer. This includes a lower risk for estrogen and androgens. There are also some factors related to insulin, adipokines, etc. Similar mechanisms might work in the survival of breast cancer. This will overall reduce mortality and recurrence related to the disease.

Breast Cancer Overview

According to the Centers for Disease Control and Prevention (CDC), breast cancer is a disease caused by the uncontrolled multiplication of cells in the breast. The classification of breast cancer mainly depends on the type of cells that turn into cancer. Recent data estimated that about 2 million new cases were reported in 2020, and there has also been an increase in the rate of incidents over the past few years [62-65].

There are two main types of breast cancer: non-small cell cancer (non-invasive) and squamous cell cancer (invasive). Non-invasive breast cancer, like ductal carcinoma in situ (DCIS), is limited to the ducts and doesn't spread to the surrounding tissues. As opposed to, breast cancer can spread to neighboring tissues. Cancer is also a complex disease whose management varies depending on the presentation of surface markers such as

hormone receptor (HR) and HER2. The commonest type of breast cancer is hormone receptor positive (HR+)/HER2 negative, accounting approximately 70% of patients and can be treated with hormonal medications such as tamoxifen. HER2-positive breast cancer is characterized by an overdose of HER2, which is responsible for 15 to 20% of cases, and can be treated with HER2-targeted therapies such as trastuzumab. Finally, triple-negative breast cancer (TNBC) has lower expression of ER, PR, and HER2 and tends to be aggressive, requiring chemotherapy as first-line treatment, while other treatments are being investigated [66-68].

Determining cancer risk is important for effective medical screening and prophylaxis. There are seven main risk factors associated with the development of breast cancer: gender, age, personal and family background, genetic predisposition medical history, pregnancy, external hormonal drug use, and genetic predisposition [69]. It is important to remember that the possibility of breast cancer increases with age, and those with breast cancer in a first-degree relative are 2-3 times more likely to develop the disease [70-72].

There is a 95% guarantee for breast cancer that these are carcinomas. Breast cancer grows from elements of epithelial cells. Breast cancer is divided into two types. They have been named in situ carcinoma and invasive carcinoma which has also been named infiltrative. In ductal or lobular epithelium, there's an increase in carcinoma. So it'll stay there. There won't be any attack on the basement membrane underneath it. But it's forming an extension beyond the epithelial boundaries [73-75]. The ability for metastasis won't be there anymore when there's both a malignant and local disease. Beyond the basement membrane extends to epithelial border. Therefore, the disease is known as invasive or infiltrating ductal or lobular carcinoma. This raises the possibility of metastasis and death occurring in invasive disease [76, 77].

Breast cancer is the deadly disease among women. Most cancers are cured through surgery [78]. Only 1/3 has chemo resistant features, showing slow growth. But there is immediate metastasis. Early and recent treatments reduce the chances of developing tumors. But a repeat is certain. This will result in a higher mortality rate [79-81].

The seeds that are responsible for the behavior of breast cancer cells are grown in their origin. In the embryonic stage, lactating cells are affected by invasive and motile properties and cell movements. At the time of pregnancy, the circulatory formation of the mammary ducts and the alveoli occurs. These are enclosed as bilayered epithelial structures in the central lumen. Lumen cells are connected to each other by E-cadherin. It is needed for the survival of lactating cells. The luminal layer is surrounded by myoepithelial cells and enters each other through P-cadherin. P-cadherin maintained the development of preterm lactation. It is describing that myoepithelial cell junctions loosen up and trigger ductal branching. This is done by allowing luminal cells or basal progenitors that are over-allowance to basement membrane signals. Development of these bidirectional arrangements by connecting luminal and myoepithelial layers through desmosomal cadherin, desmocolin (DSC) and desmoglin (DSG). In normal mammary glands, H-cadherin is expressed. But in breast tumor cell lines, cadherin 11 and n-cadherin are expressed. There is an absence of expression patterns of these proteins in normal glands [82-84] (Fig 2)

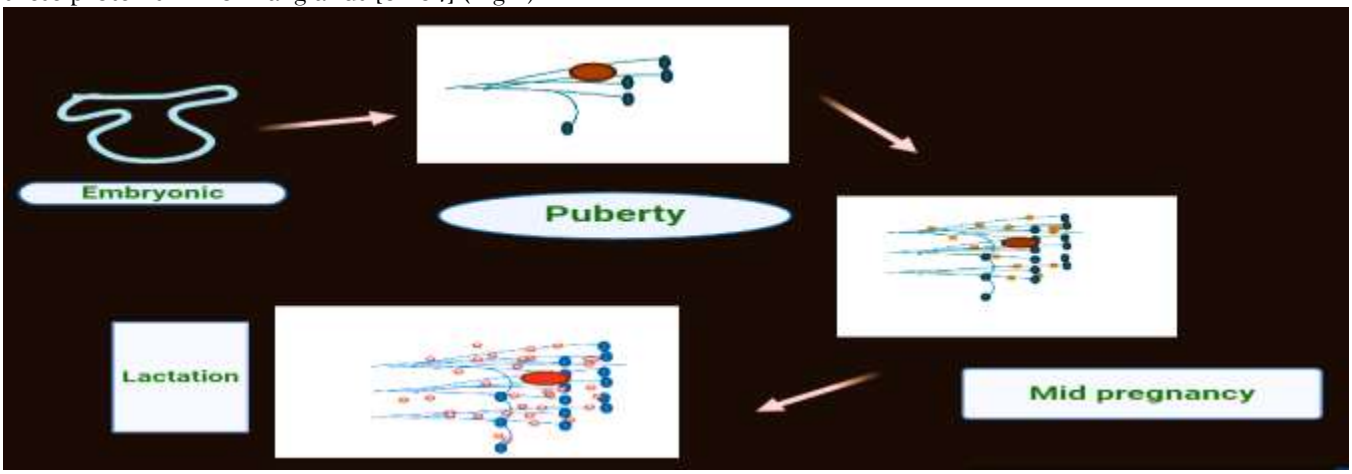

Figure 2. Embryonic and adult development of mammary gland

3 Symptoms and clinical manifestations of breast cancer

The World Health Organization defines cancer as a broad group of diseases that occur in almost any organ or tissue in the body in which cells are abnormal. It can grow out of control, spread beyond normal, invade other parts of the body, and/or spread to other organs. . The underlying factors that promote tumor growth are called "cancer symptoms." include: (1) maintain proliferative signaling, (2) avoiding growth suppression, (3) activating invasion and metastasis, (4) enabling replicative immortalization, (5) promoting angiogenesis, (6) resisting cell death, (7) reprogramming energy metabolism, (8) inhibiting cell death and transformation, (9) tumor-promoting inflammation, (10) opening phenotypic plasticity, (11) irreversible plasticity, (12) promoting irreversible plasticity. Epigenetic reprogramming [85-90].

Some signs of breast cancer are considered classic symptoms. The first classic symptom is a lump in the breast or armpit. This will change its structure, cyclical changes, size, and skin conditions just like the monthly self-exams known as BSE. Common alert features of breast cancer include, for example, a lump that feels like a mass or swelling in the breast, lymph nodes in the armpit gets swell, blood discharge from the nipple, pain in the nipple, inversion of the nipple, scales or dimpling on the nipple skin, and persistent tenderness in the breast [91-93]. Lastly, there can be unusual pain or discomfort in the breast. In the metastatic stage, known as advanced, the underarm lymph nodes show more symptoms, such as bone pain, lung metastases causing shortness of breath, liver metastases leading to loss of appetite, and weight loss, headaches, nerve weakness, or pain [94, 95].

In clinical ways, breast cancer is considered a heterogeneous disease. Profile identification for gene expression is divided into two basic groups. These groups depend on the estrogen receptor called the ER. Tumors in the breast are associated with ER expression of hormone-related factors. But tumors that are not related to hormones do not express ER. According to the origin of each cell type such as luminal or myoepithelial cell compartment, breast cancer classification is basal-like and non-basal-like. Basal likes are also considered "triple negatives". It accounts for about 10% of breast cancer. Its explanation is done by three hormonal receptors that are not present. These receptors are ER, human growth factor neuroreceptor (HER2), and the progesterone receptor known as PR. So, basal cytokeratin is highly expressed. There is also a difference in non-basal cancers. It is rich in luminal A, luminal B, and HER2 [96, 97] (Fig 3).

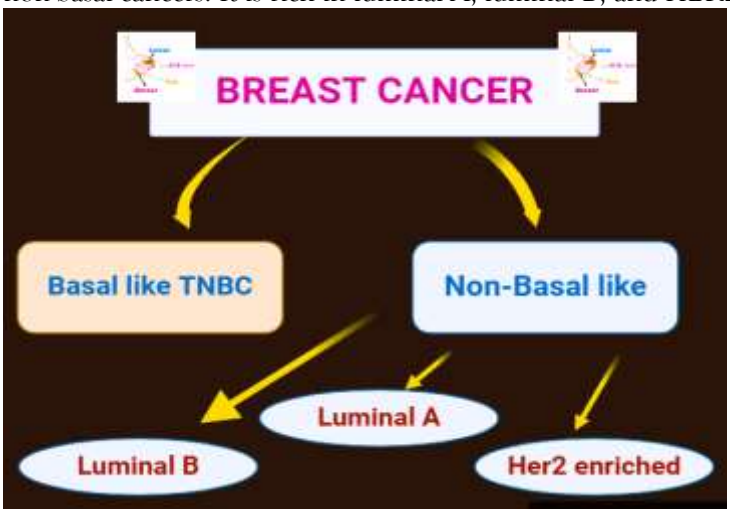

Figure 3. Breast cancer sub-types and relative prevalence

There are many women around the world who are diagnosed by breast cancer. So, it will be found that breast cancer is numerically overlooked in other categories of health issues. It will also be considered an orphan disease. The reason for this is the lack of knowledge about this disease and the characteristics of tumors that distribute general care [98-100]. Recent policies have been made internationally for cancer, and plans have been given for new initiatives. But these are not related to breast cancer. Nutritional recommendations are also not considered. There is also a decrease in deaths in third world countries [101].

Today, it is a dangerous disease in women in Europe. Occurrence of breast cancer is increasing with age and patients tend to occur after menopause [102]. Diagnosis is a better option for breast cancer. Treatment of the disease may then be good for the survival of the patient. Survivors have improved over the years, but the risk

of recurrence is probably for the rest of life. If the cancer returns after some time, it will cause more stress [103-105].

In comparison to initial organized diagnosis, recurrence is adjusted and more issues are perceived. This adjustment is reliable on the part of the woman for an indefinite period in the future and is more limited. There is a study that describes the intent of new diagnosis for cancer recurrence. It delineates the experience of women regarding psychological issues differently from the new diagnosis. The extent of recurrence through the early stages of breast cancer is directly illustrated in the psychological phase [106-108].

4 Breast cancer and physical activities

4.1. At molecular and cellular levels

Physical exercise is considered a potential intervention to improve the quality of life of women with breast cancer. Physical exercise has long been considered important in the treatment of many chronic disorders and has been successful in improving the quality of life and reducing all-cause mortality [109]. A new study suggests that moderate physical activity may also reduce and limited the risk of dying from breast cancer; thus, exercise may not only improve well-being but also survival. Breast cancer is considered the foremost common type of cancer within the world. More specifically, it refers to a type of cancer that occurs in the breast tissue (especially the non-ductal and ductal). [110] and includes various pathological conditions with many different characteristics at the molecular and cellular levels. These diseases have longer survival rates than other types of cancer. However, recurrence, metastatic spread and complications due to surgery can harm the physical and mental health of patients [111-113].

The coordination between physical activity and the reduction of chances of mortality due to breast cancer, as well as the lesser or less severe negative effects following treatment, is significant. Unfortunately, women diagnosed with breast cancer reduce their level of physical activity by up to 11 percent, with even greater reductions observed in patients undergoing chemotherapy (50 percent) and radiotherapy (24 percent).

4.2. Psychological aspects

Since physical exercise is of utmost importance in improving physical functioning, such as cardiorespiratory fitness, muscle strength, and psychological fitness, and taking into account that a pronounced decrease in physical performance, negative changes in body composition (e.g., increased body mass) and an increased trend toward depression or anxiety are common side effects of cancer treatment, exercise after breast cancer therapy. The role of has become an important area of research [114-118].

Because approximately one-third of breast cancer patients receiving adjuvant chemotherapy experience cardiotoxicity, the role of exercise training in reducing cardiotoxic effects has been further investigated by physicians. Limited data are currently available to determine the best aerobic training regimen (including type, duration, and duration of exercise) to improve cardiovascular fitness and reduce morbidity and cancer risk [119]. For example, recent considers have appeared that aerobic exercise is effectual on anthracycline- and anti-HER2 monoclonal antibody-induced cardiotoxicity in women with breast cancer, improving diastolic function and cardiopulmonary function. [120].

The guidelines for physical activity for Americans have reduced the risks of recurrence and mortality by 50% due to breast cancer. Therefore, the evidence from epidemics supports that physical activity during leisure time and organized exercise before and after a diagnosis of breast cancer plays a role in reducing the risks of recurrence and mortality associated with breast cancer. Exercise can affect the systems of multiple organs and impact the overall body's homeostasis, and the integration of exercise with the brain's system has been studied to understand the molecular basis of exercise. In addition, exercise is thought to be beneficial in protecting the immune system and preventing cancer, as well as many biological processes occurring in the body. [121-123] (Fig 4).

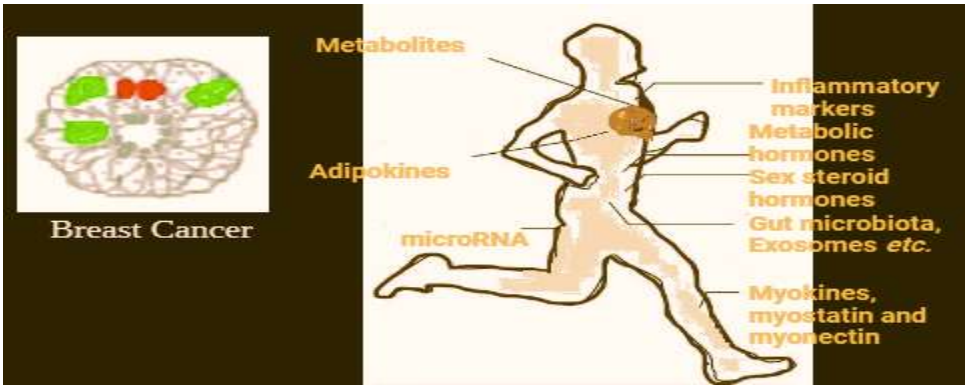

Figure 4. Physical activity affects the systemic factors linked with the outcomes of breast cancer

5 The natural components connecting physical movement and breast cancer

Sex steroid hormones increase the incidence and possibilities of breast cancer in women with elevated systemic levels of estrogen and androgen. In premenopausal ladies, physical movement is contrarily related with levels of the sex hormones estradiol and testosterone. [124]. Since sex hormones are primarily produced in adipose tissues in postmenopausal women, after adjusting for body mass index, physical activity was found to be associated with reduced levels of estrogen and estradiol, suggesting that weight loss and obesity may be associated with regulation of sex hormones and reduce cancer risk. [125-127].

The effects of sex hormones on body functioning suggest that physical activity, independent of weight and physical weakness, may protect against breast cancer by reducing sex hormones. [128].

Numerous ponders have appeared that elevated plasma insulin levels are coupled with cancer and increase the risk of acquiring cancer. Insulin resistance and insulin-like growth factors (IGFs) may raise the cancer risk by increasing estrogen levels. Exercise reduces insulin resistance and insulin sensitivity, increases glucose uptake, total IGF-1, and IGF-binding proteins. [129-131]. In addition, fasting insulin levels decreased in breast cancer patients due to weight loss after exercise intervention, and this is thought to contribute to improved breast cancer screening. Sex steroid hormones such as estrogen and androgen increase the risk of developing and spreading breast cancer in women with breast cancer. Physical activity in premenopausal women is associated with levels of the sex hormones estradiol and testosterone. This suggests that weight loss and obesity may be associated with regulating female hormones and reducing cancer risk in patients. (Table 2) [132-136].

Table 2. Mediators effected by physical activity in breast cancer

Sex steroid hormones	Estrogen, Testosterone and androgens
Metabolic hormones	Insulin, Insulin-like growth factor, Leptin,
Inflammatory markers	C-reactive proteins, Tumor necrosis factor, Inter leukins
Stress hormones	Cortisol, Epinephrine, Nor Epinephrine
Adipokines	Resistin, Adiponectin

Physical activity is generally anti-inflammatory and may reduce the risk of disease in healthy individuals without a diagnosis of cancer. The influence of physical activity on IL-6, TNF-α, and CRP levels are variable and limited. Adipose tissue contains multiple cell types found in mammary glands and secretes adiponectin, leptin, resistin, and other cytokines. Physical activity has also been shown to regulate circulating adipokines. Leptin promotes breast cancer growth, migration, and metastasis through its proinflammatory effects, while adiponectin is an anti-inflammatory hormone that interacts negatively with fat. Low adiponectin is associated with higher body weight and more fat, and the adiponectin: leptin ratio is an important determinant of the effect of adipokines on breast cancer risk. Physical activity has been shown to directly affect body fat, resulting in increased serum adiponectin levels and decreased serum leptin levels. [137, 138].

Physical activity can modulate cytokines and adipokines. However, a small reduction in cancer risk has been associated with reducing obesity and losing weight. Myocaine and stress hormones release various actin proteins, such as IL-6, myonectin, myostatin, and irisin, into the skeletal muscles, our largest organ, during exercise, and circulating actin levels are adjusted by the exercise [139].

An approach to characterize muscle tissue to recognize the molecular basis of exercise performance. Clinical studies have shown that increasing irisin levels through physical activity can prevent cancer by activating caspases and inhibiting NF-κB activity. The stress hormone catecholamines are an important factor in the prevention of breast cancer. Exercise rapidly increases plasma epinephrine and norepinephrine. Cortisol levels vary with the duration and intensity of exercise. Exercise can regulate tumor growth by activating the catecholamines hippo signaling pathway. [140-142].

However, the role of stress hormones as an important component of exercise has not been directly studied in cancer patients and may have implications for cancer prevention [143]. Many circulating factors such as hormones, inflammatory markers, and actin can be regulated by physical activity and exercise. Many metabolites in plasma play a role in body functions and may play an important role in cancer prevention [144-146].

Various ponders have appeared that plasma metabolites are related with cancer chance and may serve as biomarkers for early cancer discovery. Oxidative stress and reactive oxygen species are associated with many diseases, including cancer development and progression. Interestingly, intense exercise creates a prooxidative environment [147, 148]. However, regular exercise can increase the ability to withstand oxidative environments by increasing antioxidant defenses. In this context, the persistent physiological effects of oxidative stress may help prevent breast cancer progression and metastasis. [149-151].

Recent studies have revealed that expression of microRNAs is regulated by physical activity and exercise in healthy individuals and patients with various diseases.. Due to their significant role in regulating cell growth, microRNAs may serve as important regulators and potential biomarkers of movement and response. Some microRNAs associated with breast cancer, such as miR-21 and let-7a, have been altered through exercise, indicating that microRNAs may mediate the relationship between exercise and cancer. [152, 153].

Functional molecules such as proteins, lipids, mRNA and microRNA, as well as different soluble mediators, can act as a source of communication between tissues during physical exercise, leading to biological effects. Physical exercise causes the rapid release of exosomes into the circulation, and their production plays an important role in the overall coordination of the body by providing actin. Therefore, ectopic cysts can ameliorate the negative effects of exercise and affect breast development. [154, 155].

Physical activity has a significant effect on the level and function of the immune system, as do natural antibiotics, which are the most potent anti-infective agents in circulation. IL-6 increased the activation of killer cells in spontaneously mutated mice, leading to reduced tumor initiation and progression [156]. Additionally, the tumor microenvironment can regulate inflammatory processes by using myelosuppressive cells, exercise, and weight loss as preventive strategies, thus controlling tumor growth and metastasis. Finally, Evidence suggests that gut microbiota may play a role in the development of many cancers and may influence treatment and that the microbiome may play a role in the maintenance of some deadly diseases, including breast cancer. Exercise may reduce obesity-induced inflammatory diseases and alter the structure and metabolites of the gut microbiota. Therefore, physical interventions may alter the gut microbial community composition associated with disease. Generally, physical activity and the changes that happen in the body during it can help in preventing breast cancer and improving overall survival outcomes. [157 –159].

6 DISCUSSION

Physical activity may prevent breast cancer, especially in young premenopausal and postmenopausal women. Both recreational and occupational activities reduce the overall risk. [160]. There is a significant relationship between recreational activities and cancer risk, and this relationship is mediated by nutrition and exercise. Protective effects of physical activity have been shown in premenopausal and postmenopausal women, and retrospective analyses also suggest that physical activity has a protective effect.

Recent studies have shown that there is a link between physical activity and cancer, and that it has a protective effect on the body against cancer. It is stated that physical activity reduces the risk of developing 13 types of cancer. The relationship between exercise and reduced cancer risk is especially strong in women with early-stage breast cancer. [161-164].

The risk of breast cancer is influenced by endogenous hormones. Physical activity can provide a way to fundamentally prevent breast cancer through its effect on ovarian hormones. This effect is shown through

changes in age during menstruation and the number and nature of menstrual cycles, which are factors related to the risk of breast cancer itself [165].

Studies on animals show that the risk of breast cancer is lower with exercise at the onset of tumors, but not necessarily during tumor promotion. Epidemiological studies indicate that overall, women who are more physically active have a lower risk of breast cancer, while experimental studies on the effects of exercise in women suggest that exercise can affect the characteristics of the menstrual cycle. Studies show that physical activity reduces the hazards of cancer. It can prevent cancer growth and metastasis, beat the after-effects of cancer treatment, increase patients' endurance to treatment, and improve patients' well-being. By deeply understanding the effects of physical training on the development and progression of malignant tumors, metabolic pathways, and immune responses, we can understand the relationship between exercise and cancer prevention, and then develop personalized treatments for patients. Besides the positive effects of exercise, it's also helpful in treating other diseases and differentiating some cancers. [166-168].

Despite this, women have faced obstacles in experimental studies and epidemiological studies of physical activity and breast cancer risk due to several methodological limitations [169]. Major problems in epidemiological studies include inadequate and inadequate measurement of women's physical activity throughout their lives and inadequate control of potential confounding factors. Experimental studies examining the effects of physical activity on female fertility have not fully assessed the effects of exercise and changes in the menstrual cycle. Physical exercise, when combined with surgery, chemotherapy, radiation therapy, immunotherapy, and other cancer treatments, can inhibit the growth of cancer cells. It fights cancer by improving the proliferation of cancer cells, increasing blood perfusion, promoting angiogenesis, and activating the body's immune system. Exercise may improve cancer risk and survival, especially for breast, colon and prostate cancer. Exercise affects cancer metabolic reprogramming through improvements in blood perfusion, angiogenesis, and cancer hypoxia. [170-172].

7 CONCLUSION

There are a lot of risk factors involved in the development of breast cancer. The data available shows that women are at risk of breast cancer recurrence. In developed countries, women are dying from breast cancer. The lethality of breast cancer also contributes to mortality. The significant links between lifetime and current physical activity and the risk of death from all causes will be associated with death related to breast cancer. Physical activity after diagnosis will reduce the risk of death. Further studies are discovering new mechanisms through which physical activity increases the survival of breast cancer survivors.

Future Perspective

Exercise can motivate people to make lifestyle changes, improve aerobic fitness and physical activity, manage fatigue, and improve quality of life. In addition to non-drug prevention and prevention, exercise can help reduce the risk of cancer. Moreover, physical activity plays a role in the treatment of all types of cancer. For instance, it can lessen treatment-related toxicity and side effects, and enhance the effects of other treatments. So, it's important to not just look into the effects of physical exercise on all aspects of cancer, but also to figure out the type, amount, and intensity of exercise that matters. Patients should develop an exercise program tailored to the specific needs of their cancer treatment and follow physical therapy instructions. Long-term exercise follow-up in people with cancer can improve muscle strength, physical fitness, physical capacity, and exercise tolerance.

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