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Primary Prevention of Breast Cancer

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ABSTRACT

Breast cancer is the most common cancer among women and with high mortality rate. There is evidence showing the influence of life style and environmental factors on the development of mammary gland cancer (high-fat diet, alcohol consumption, and lack of physical exercise). Primary prevention may contribute to a decrease in morbidity and mortality. The aim of this paper is to review current knowledge and reports regarding primary prevention of breast cancer.

1. Introduction

Breast cancer is currently one of the most frequently diagnosed malignancies. WHO data in 2018 states that in the world, the incidence of breast cancer is the second most malignant disease with 2,088,849 new cases and ranks fifth cause of death due to malignant disease.[1] While in Indonesia, breast cancer ranks first malignancy. In conditions like this, it is necessary to pursue a breast cancer prevention program. There is something called primary prevention of breast cancer. This effort is to avoid or intervene on risk factors that can increase the incidence of breast cancer. At the same time, secondary prevention is by making efforts to detect the disease early using breast self-examination (BSE), clinical breast examination (CBE), breast ultrasound examination and mammography.

Risk factors and prevention of breast cancer

Some risk factors for breast cancer that cannot be modified or intervened, such as gender (highest incidence in women), age (highest incidence in fifth or sixth decades) and a family history of breast cancer patients (such as mother, child, sister, and others). However, there are modifiable risk factors for breast cancer.[2,3]

For primary prevention of breast cancer, surgery such as bilateral mastectomy or bilateral salpingo-oophorectomy can be performed, or hormonal therapy can also be given using selective estrogen

receptor modulators such as tamoxifen and raloxifene. Nevertheless, the easiest way is to make lifestyle modifications; These include a low-fat diet and an added portion of vegetables and fruits, maintaining ideal body weight, physical exercise, exclusive breastfeeding for breastfeeding mothers, and avoiding alcohol consumption.

In 2007 the World Cancer Research Fund/ American Institute for Cancer Research (WCFR/AICR) analyzed various studies on diet and physical activity on cancer. A healthy diet that can prevent cancer is a diet that can maintain ideal body weight, in this case, are fruits, vegetables, cereals and legumes; reduce red meat and salt, and do not consume processed meat products. Also, avoid high-calorie diets and alcohol.[4]

Consuming fibre from vegetables will stimulate anaerobic bacterial fermentation in the large intestine, producing short-chain fatty acids (acetic, propionate, butyrate). These short-chain fatty acids can reduce cell proliferation and increase apoptosis. In addition, vegetables are a source of phytoestrogens, which can bind and change the activity of estrogen receptors in the body to reduce the risk of developing cancers associated with the hormone estrogen, such as breast cancer.

Women who are overweight or obese have a higher risk of developing breast cancer, especially in the postmenopausal women group. The study found that if a woman has gained 25 kg or more since the age of 18, she has a higher risk of developing breast cancer. Maintaining an ideal body weight will reduce the risk of breast cancer, and in breast cancer, patients themselves will improve the prognosis and reduce the possibility of recurrence.[3,4]

The risk of breast cancer increases depending on the dose/amount of alcohol consumed. The mechanism of breast cancer caused by alcohol is an increase in the body's estrogen concentration. When consuming 10 grams of ethanol a day, the risk increases to 8% in the postmenopausal women group; and increases to 9% in premenopausal women. Research conducted by Frydenberg et al. concluded that consuming alcohol >10grams a week would increase the concentration of 17β-estradiol compared to those consuming <10 grams and found a correlation between the increase in these hormones and the incidence of breast cancer.

Epidemiological studies have found that moderate-intensity physical activity can reduce the risk of breast cancer by 10-25%, compared to inactive women. The WRCF recommends doing moderate physical activity (equivalent to brisk walking) for 30 minutes.

2. Conclusion

Breast cancer prevention has a vital role in the treatment of the disease itself. By making lifestyle modifications, it is expected to reduce breast cancer risk factors, which can reduce the incidence of breast cancer itself. However, it should be noted that if a woman has these risk factors, it does not mean that she will have breast cancer, and vice versa if the woman does not have the risk factors, it does not mean that she will not have breast cancer.

3. Referances

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