It is food a really important factor in breast cancer developing?

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Abstract

The identification and quantification of potentially specific interest, since several studies ascertained that a diet rich in vegetables and fruit has a favorable impact on breast cancer risk. This study is trying to offer patients a diet to help them fight against their disease. Our retrospective study was conducted on a sample of 302 patients hospitalized and operated on in the Surgical Clinic no.1, of the County University Emergency Hospital, Timisoara. Using the patient's diet history and post-operative patient's visits, we have completed a questionnaire. Preoperatively, 67% of patients consumed a diet rich in meat and fat. Postoperatively, 93%, due to medical recommendations have changed diet, which became prevalent in fruits and vegetables, rich in antioxidants. As a conclusion, radical surgery removes cancerous tumors, but increased immunity and a diet based on antioxidants, may also contribute to the healing of cancer.

Keywords: breast cancer, diet, nutrients, health, fat, weight

1. Introduction

Breast cancer is the most frequent type of cancer in women. Although the incidence of breast cancer has increased over the last decades, the outcome has improved in the developed world since the late 90’s. The identification and quantification of potentially modifiable risk factors is therefore much more relevant to focus potential prevention strategies. Among these, diet is of specific interest, since several studies found that a diet rich in vegetables and fruit has a favorable impact on breast cancer risk.

The treatment of breast cancer has undergone some major changes over the past few years, ranging away from a mutilating Halsted radical mastectomy, towards breast-conserving procedures.

Nutrition was considered, because giving your body the nutrients it needs, is important for everyone. When combined with exercising and maintaining the right weight, eating well is an excellent way to help your body stay strong and healthy. Patients who are currently undergoing treatment for breast cancer, or have been treated for breast cancer in the past, eating properly is particularly important. Healthy eating means eating a variety of foods that give the body the nutrients which are need to maintain health [1,2,3].

Knowing that many patients are particularly interested in how nutrition can influence cancer risk reduction and recovery, with this study we try to offer them a diet to help him fight against their disease.

2. Materials and Method

We started with this baseline. Research has shown that women who eat their fair share of fruits and vegetables have much lower rates of breast cancer.
Specific nutrients naturally found in fruits and vegetables seem to play a role in reducing risk.

The association between fruit and vegetables and breast cancer is biologically plausible, because of their high contents of potentially anticarcinogenic compounds, but epidemiological studies of individual foods or of food groups indicate that high intakes of fruit or vegetables have a limited, or no major effect on breast cancer incidence [3]. On the other hand, the literature on dietary patterns and breast cancer risk suggests that a diet characterized by food with high fat and high sugar content (western dietary pattern) is associated with an increased risk of breast cancer, whereas a diet characterized by vegetables, fruit, fish and white meat (prudent dietary pattern) is associated with a reduced risk [3].

Between the two 'prudent' patterns we identified, one characterized by high intake of vegetables, and the other by high intake of fruits and salad, only the latter was associated with reduced breast cancer risk. Fruit and vegetables, both contain high levels of nutrients with antioxidant properties, such as carotenoids and vitamins [4].

Healthy Eating During Breast Cancer Treatment. If the patients are recovering from surgery, or receiving chemotherapy, radiation, or other breast cancer treatment, one must focus on getting rid of the cancer. Eating well will help them stay strong for this fight by giving for the body the nutrients it needs. The purpose is how can eat to be able to manage the weight, reduce fatigue, build the energy, and get enough fluids.

Healthy Eating After Breast Cancer Treatment. Healthy eating and physical activity after treatment are important for recovery and begin healthy normal life beyond breast cancer. Is important to learn how to create a healthy eating plan, that includes exercise [3].

Nutrition and Breast Cancer Risk Reduction. We are aware today about the impact of food on breast cancer risk, we read about foods that contain healthy nutritional compounds, we understand what "organic" and "genetically modified" really mean, and learn how to choose and prepare foods in ways that lower the risk of food-borne illnesses [5].

The influence of Dietary Supplements consumption. Many women with breast cancer take dietary supplements such as vitamins, minerals, and herbs, hoping it helps them stay strong. Some of nutrients include vitamins C and E and phytochemicals such as pycnogenols and carotenoids. The most popular carotenoid is beta carotene. But beta carotene is not one that has not shown favorable results in studies. Taking an isolated amount of any one carotenoid, can throw the natural balance that may obtain through the diet out. It is far better to eat a handful of baby carrots to get a boost of carotenoids the way mother nature intended. As far as vitamins C and E, like supplement of diet, these are both relatively safe and effective supplements, but do not exceed 500 mg of vitamin C per day in supplement form, or more than 400 IU of vitamin E per day [6].

Another nutritional element that may help reduce breast cancer risk is fibres. Some of the fibres binds to estrogen. High exposure to estrogen throughout one's life is one of the high risk factors for breast cancer. Fiber intake can be increased by eating more fruits, vegetables and wholesome grains.

Obesity is a strong risk factor for developing breast cancer, especially if it is added during adult years. A possibly explanation is increased body weight seems to result in increased circulating estrogen levels.

The influence of Fat consumption. Unfortunately, research on the role of total fat consumption is inconsistent. There has not been a lot of good research due to the fact that people who eat high-fat diets are typically overweight. Even if future research was not able to find an association between total fat intake and breast cancer risk, consuming a diet low in fat makes it much easier to maintain a lean body weight. The standard advice is to consume no more than 30 percent of your calories from fat. Some health professionals say it is better to limit fat calories to 20 percent of food intake. There is evidence that saturated fats may increase breast cancer risk. Sources of saturated fat include foods from animal origin, coconut oil, palm oil, palm kernel oil and cocoa butter. Monounsaturated fats from sources such as olive oil, canola oil and peanut oil, may actually help decrease breast cancer risk.

Of particular interest is olive oil. Aside from being a monounsaturated fat, olive oil contains important phytochemicals and a significant amount of vitamin E. Phytochemicals and vitamin E possess antioxidant activity, meaning they help protect against oxidation, a process by which cancer can develop. Greek women typically consume 42 percent of their calories from fat, while American...
women, on average 35 percent of their calories from fat. Yet, Greek women have substantially lower rates of mortality due to breast cancer when compared to American women. Unlike the typical American diet, most of the fat in the Greek diet comes from olive oil or fish. Fish has promising benefits, too. Studies involving the use of fish oils seem to indicate that fish oils can help reduce the risk of developing breast cancer. This is the reason why we recommend our patients the use of olive oil or fish, but daily exercise is needed to keep their weight under control \[7-9\].

The influence of Alcohol consumption. Three out of four Americans say there is too much conflicting information when it comes to eating a healthy diet. Strong evidence suggests that consuming more than 3 to 4 drinks per week increases the risk of breast cancer. We recommend therefore, for reduced disease risk, to eat red grapes or drink purple, 100 percent natural grape juice. The protective phytochemicals are found in the grapes, not the alcohol. Tea and onions are another source of these protective phytochemicals. However, there is no denying that alcohol in moderation is associated with a lower risk of heart disease. A large body of evidence supports this. But, there is convincing evidence that moderate alcohol consumption may lead to modest increases in breast cancer risk. In 1994 experts reviewed 38 case-controlled studies involving alcohol and breast cancer. Their findings indicated that 1 drink per day resulted in a 10 percent increase in breast cancer. More recently, a pooled analysis of data published in 1998 showed that for every 10 g per day of alcohol consumption, breast cancer risk increased 9 percent, no matter what type of alcoholic beverage was being consumed. In addition, this pooled analysis showed that women who drank two to five drinks per day had a 41 percent higher risk. We advice our patients to limit consumption to less than one alcoholic drink per day. Because heart disease is the leading cause of death among men and women, we cannot advise to eliminate alcohol altogether. There is a greater chance to develop heart disease than breast cancer. \[10,11\].

The influence of Meat Consumption. Evidence that meat consumption increases breast cancer risk is growing. Two culprits are speculated to be: the saturated fat and the type of animal protein in meat. Red meat consumption has conclusively been linked to colon cancer. The conclusive evidence is not as strong for breast cancer. Others did not find significant evidence of an association the meat pattern, correlated with high consumption of meat \[4\]. Nonetheless, we would recommend limiting red meat to no more than two servings per week. The third culprit comes when meat, including beef, poultry and fish, is exposed to high temperatures and harmful substances called heterocyclic amines (HCAs) are formed. HCAs are known to be harmful to the pancreas, colon and prostate.

Recently, the Iowa Women's Health Study published a report stating that women who consistently eat their red meat cooked well done had almost five times the risk of breast cancer as those who ate their meats rare or medium. However, it is well known that undercooked meat carries its own health concerns, namely exposure to harmful bacteria. In addition to limiting the amount of red meat one consumes, we must follow some precautions: remove fat from meat before grilling; avoid foods that have been charred before grilling, marinate meat and microwave it for 3 to 5 minutes to cut down on carcinogens (substances that cause cancer). This step is important because it limits the meat's exposure to high temperatures \[11,12\].

The influence of Soy consumption. Interest in soy's role in preventing breast cancer developed after scientists observed that women living in Asia have significantly lower rates of breast cancer than women in the U.S. Asian women typically consume a diet rich in soy products while women in the U.S. typically do not. Experts are not ready to make strong claims concerning soy and its ability to prevent cancer. However, there is substantial data that links soy to the prevention of breast, prostate, lung and colon cancers.

A recent study in England found a strong association between a high intake of soy phytoestrogens and a lower risk of breast cancer. Moreover, experts will not say with certainty that soy does reduce the risk of developing breast cancer, but there is a large amount of evidence suggesting that soy is beneficial and should be incorporated into diet.

Phytoestrogens are plant hormones that are similar to human estrogens. Of importance is the fact that phytoestrogens are weaker than human estrogen. Phytoestrogens are believed to be among the key substances in soy that help reduce the risk of breast and prostate cancers. As weaker versions of
estrogen, phytoestrogens seem to play a dual role: when there is too much estrogen, the phytoestrogens actually block estrogen's harmful effects, and when there is not enough estrogen, phytoestrogens make up for the difference. In addition, phytoestrogens seem to act as antioxidants, thus further protecting cells. Other foods besides soy products contain phytoestrogens, but the best source without a doubt is soy.

Studies are lacking in support for getting phytoestrogens from a pill, though, so food sources are absolutely best options. For incorporating soy into diet must not look to soy sauce or soybean oil for the benefits associated with breast cancer risk reduction. These products may be made from soy, but they contain none of the beneficial phytoestrogens and no soy protein. To avail from soy's benefits, try to include 30 to 60 mg per day from 1/2 cup fresh or frozen soybeans (70 mg), or one cup soy milk (20 mg), or 1/4 cup soy nuts, roasted (84 mg), or 250 mg tofu (38 mg), or 1/4 cup soy powder (60 mg). Fresh or frozen edamame, are mild, sweet-tasting green soybeans, or a strawberry-banana shake (100 mg phytoestrogen).

We can identify "cancer protectors": fruits and vegetables, especially those dark in color; aim for five to nine servings per day, fiber, especially for colon cancer; aim for 25 to 35 g per day, antioxidants, such as carotenes and vitamins C & E (get carotenes through your diet, not a pill), selenium, especially for prostate cancer (no more than 800 mcg/day as a supplement), calcium; aim for 1200 to 1500 mg per day, omega-3 fatty acids (from fish oil), must to include fish in diet at least once or twice per week, soy, aim for one to two servings of soy products per day, tea (black or green); aim for three to five servings per day, exercise: aim for 30 minutes most days of the week [4].

Deffinitely, cancer promoters, are: overweight, dietary fat, red meat, especially for colon cancer, burned food, nitrates and nitrites, avoid cured meats, alcohol: men should limit intake to two drinks or less per day, while women should have one or less drinks per day.

We recommend our patients to have a diet that is largely vegetarian (certainly low in red meats), centering on legumes, whole grains, fruits and vegetables and eat fish once or twice a week. We also recommend five to nine servings a day of fruits and vegetables, and to include citrus fruits or other foods rich in vitamin C, dark leafy greens, high-fiber produce and cruciferous vegetables. Consequently, one should limit fat intake to mostly monounsaturated and omega-3 fats (from olive oil, canola oil, nuts and seeds), and choose whole grains (whole wheat, oatmeal, brown rice) over refined grains. A source of calcium (from diet or supplement), soy and flaxseed should be included in one’s diet, and relax with a few cups of tea a day. While some studies showed soy offers a protective effect against breast cancer, a few studies showed the estrogen-like effects in isoflavones may be harmful for women with breast cancer [13-17].

American Institute for Cancer Research stresses that data on soy and breast cancer are not conclusive, and more work is needed to be done before any dietary recommendations can be made.

What we know at this point is that the phytoestrogens in soy foods are "anti-estrogens". In other words, they may block estrogen from reaching the receptors - therefore potentially protecting women from developing breast cancer. Studies found that pre-menopausal may benefit from eating soy foods as their natural estrogen levels are high. However, this may not be true to post-menopausal women. Studies found that soy could become "pro-estrogen" in women with low levels of natural estrogen. In other words, concentrated soy supplements may add estrogen to the body and hence increase breast cancer risk in post-menopausal women.

Most health professionals agree that a healthy balanced diet that includes soy is certainly a good idea, along with plenty of whole grains and fruits/vegetables. In addition, isolated isoflavone supplements in pills or powder, should be used in caution - especially in post-menopausal women [18-21].

3. Results and Discussion

Over a period of four years (2008-2011) at the County University Emergency Hospital Timisoara were hospitalized and operated 611 patients with breast cancer. During this period we found a gradual, annual increase in the number of cases.

Our retrospective study was conducted on a sample of 302 patients hospitalized and operated on, this time at the Surgical Clinic no. 1 of the County University Emergency Hospital, Timisoara.
Using the patient's diet history and post-operative patient's visits, we have completed the following questionnaire:

As a comment, the minimum recommendation was to eat 5 servings per day (vegetables and fruits rich in antioxidants).

I / Mainly diet before surgery had consisted in :
- Meat + fat,
- Vegetables + fruits + fiber.

II / Diet after surgery was mainly in:
- Meat + fat,
- Vegetables + fruits + fiber

III / Did you drink alcohol ? Y/N
1-2 glasses <12% alcool/100ml
If yes:
- 1-2 glasses> 12% alcool/100ml
- 1-2 glasses daily alcohol

IV / After the first surgery was required surgical removal or other treatment for other malignant tumor?

Completeness of questionnaires obtained the following results. Preoperatively, 67% of patients consumed a diet rich in meat and fat. Postoperatively, 93% due to medical recommendations have changed diet, which became prevalent in fruits and vegetables rich in antioxidants. From post-operative visits, only 8 patients were readmitted for local recurrence or metastatic secondary tumors. 9% of patients were lost from follow-up.

4. Conclusion

In conclusion, a diet rich in vegetables and fruits has a favorable impact on breast cancer risk. Furthermore, radical surgery removes cancerous tumors but increase immunity and anticancer diet contributes to cancer illness. Medical advice after discharge patients have led to change their diet, allowing healing without recurrence. Our study did not demonstrate a clear link between diet and breast cancer, but helps to change bad habits of life of our patients.

References


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