



MEASUREMENT OF RISK FACTORS OF WOMEN WITH BREAST CANCER THROUGH THE GAIL INDEX

MENSURAÇÃO DOS FATORES DE RISCO DE MULHERES COM CÂNCER MAMÁRIO ATRAVÉS DO ÍNDICE DE GAIL

MEDICIÓN DE LOS FACTORES DE RIESGO DE MUJERES CON CÁNCER DE MAMA A TRAVÉS DEL ÍNDICE DE GAIL

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ABSTRACT

Objective: to measure risk factors in women with breast cancer using the Gail Index. **Method:** it is a quantitative and retrospective study of 105 users data collection of the extension project - MUCAMA. The data were collected and analyzed from the medical records of clients with breast cancer and processed in the Gail Model software version 1.0. The study was approved by the research project of the Research Ethics Committee, protocol No. 079/2011. **Results:** of the 105 analyzed women, only 51 (48.57%) were at risk of having breast cancer according to the software. The average results for women analyzed was 0.74, with 0.38 as standard deviation and for women up to 90 years old 80.18% was obtained with less than 1.0 index, demonstrating a protective factor for cancer. **Conclusion:** at the individual level this software may underestimate the risk of having breast cancer, but the collective level determines the population risk profile. **Descriptors:** Breast Neoplasms; Risk Factors; Primary Prevention; Nursing.

RESUMO

Objetivo: mensurar fatores de risco de mulheres com câncer de mama utilizando o Índice de Gail. **Método:** estudo quantitativo, retrospectivo, de levantamento de dados secundários das 105 usuárias do projeto de extensão - MUCAMA. Os dados foram coletados e analisados a partir dos prontuários das clientes com o câncer de mama, e processados no software do Modelo de Gail versão 1.0. O estudo teve aprovado o projeto de pesquisa pelo Comitê de Ética em Pesquisa, protocolo nº 079/2011. **Resultados:** das 105 mulheres analisadas, apenas 51 (48,57%) apresentaram risco de ter câncer de mama de acordo com o *software*. A média de resultados para as mulheres analisadas foi de 0,74, tendo como desvio padrão 0,38 e para idade até 90 anos se foram obtidos 80,18%, com índice menor que 1,0, demonstrando um fator de proteção para o câncer. **Conclusão:** no âmbito individual, este *software* pode subestimar o risco de se ter câncer mamário, mas, no âmbito coletivo, determina o perfil de risco populacional. **Descritores:** Neoplasias da Mama; Fatores de Risco; Prevenção Primária; Enfermagem.

RESUMEN

Objetivo: medir los factores de riesgo en las mujeres con cáncer de mama utilizando el Índice de Gail. **Método:** Estudio cuantitativo y retrospectivo con 105 usuarios de los datos del estudio del proyecto de extensión lateral - MUCAMA. Los datos fueron recogidos y analizados a partir de los registros médicos de los clientes con el cáncer de mama y se procesan en el software de modelo Gail versión de 1.0. El estudio fue aprobado por el proyecto de investigación del Comité de Ética de la Investigación, protocolo No. 079/2011. **Resultados:** de las 105 mujeres estudiadas, sólo 51 (48,57%) se encontraban en riesgo de tener cáncer de mama según el software. Los resultados promedio de las mujeres analizadas fue de 0,74, con 0.38 como la desviación estándar y en la edad hasta los 90 años se obtuvieron 80,18%, con un índice inferior a 1,0, lo que demuestra un factor protector para cáncer. **Conclusión:** a nivel individual este software puede subestimar el riesgo de tener cáncer de mama, pero el nivel colectivo determina el perfil de riesgo de la población. **Descriptores:** Neoplasias de la Mama; Factores de Riesgo; Prevención Primaria; Enfermería.

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INTRODUCTION

Among all the types of cancer, breast cancer is the most affecting women and the second cause of death by neoplasia in the country. It is a heterogeneous disease that has a variety of clinical and morphological forms, with different degrees of tumors and metastatic potential. It mainly affects women after 50 years old, but it can also occur in younger women.¹

Breast cancer affects women physically and psychologically, because it requires aggressive treatment due to partial or total removal of the organ, representative of femininity and adjuvant treatment. Chemotherapy gives physical stress and it can lead to alopecia, demonstrating being sick. Radiotherapy can cause burns in some cases and gives fatigue and hormone therapy. Despite the protection that generates, it causes several side effects, particularly thromboembolic. Thus, the treatment is long, it can generate fear, depression and physical discomfort in the stigma of the disease. Depending on the type of surgery, it will lead to changes in lifestyle, caused by physical discomfort and low self-esteem due to changes in body image.²⁻³

Breast cancer has three steps that are interconnected: Receiving the diagnosis, usually having a negative effect on the person's life, being terrified by the mutilations and disfigurements that the therapy can generate, as the fear of finitude. In the emotional, social and material ambit, completion of a lengthy and aggressive treatment causes women sometimes to think about quitting it. The third step is the acceptance of a new body image, because the treatment modificate it, for the mastectomy, for the alopecia, or the adverse effects that persist after treatment and should be monitored for reintegration into society.⁴

Some risk factors contribute to the breast cancer. The age is the main risk factor, because 70 to 80% of cases occur in women over 50 years old and are also related to aging and exposure to carcinogens.⁵

Another important factor is the genetic predisposition, recurrent cases in the family in first-degree relatives, especially before 50 years old. Other factors are also known as early menarche, late menopause, nulliparity, among others.⁶⁻⁷

In the risk factors for breast cancer, nulliparity or late first pregnancy, studies show that women whose first pregnancy occurred before 18 years old, they have one-third of the risk, compared with the first

pregnancy over 30 years old and nulliparous. This is because the shorter exposure to estrogen. The greater the number of ovulatory cycles, the greater exposure of women to estrogen. Thus, there is a potential for genetic alterations and consequently the development of mammary tumors occurs.⁷⁻⁸

There are protective factors such as breastfeeding the more prolonged the more decreases the risk of breast cancer. That is why the importance of prenatal and postpartum consultation with encouraging breastfeeding.⁷⁻⁹

It is known that women who breastfed before, practicing physical activity, have a healthy eating and are not obese are part of the lower risk group to develop this cancer.¹⁰ Early detection of breast changes is important to take the diagnosis of a benign or malignant tumor. The follow up, associated to the risk factors, will give a diagnosis with greater accuracy and early treatment, improving the prognosis. Thus, it is recommended that women over 40 years old do a mammogram annually and that all women have at least once a year their breast examined by an experienced clinician.¹⁰

For women at high risk for breast cancer, it is recommended annual mammography from 35 years old, which may reduce mortality from this disease, where the earlier it is diagnosed, the better the chances to survive.¹⁰ Anyway, the best ways to work with breast cancer are known to prevent the factors that come from good habits and to detect early neoplasia.

OBJETIVE

- To measure the risk factors of women who had a diagnosis of breast cancer using the Gail Index.

METHOD

It is a descriptive and retrospective study, of existing secondary data survey in the records of attendance during the Center for Teaching, Research and Care Women and Breast Cancer - MUCAMA¹¹ project, approved under Protocol No. 079/2011 in accordance with the Guidelines and Standards for Human Research, through Resolution 196/96 of the National Health Council.¹²

As the model instrument the index Gail *software* was used that checks the possibility of the appearance of breast cancer in the population based on risk factors. This model was developed from the *Breast Cancer Detection and Demonstration Project - BCDDP* - which uses the variables: age of women at

first consultation, number of first degree relatives with breast cancer, age at menarche, age at first birth; number of previous breast biopsies and previous histological diagnosis of atypical hyperplasia. The Gail Index calculates the cumulative risk of developing breast cancer from the current age and the next five years until 90 years old. It was developed and validated in the United States and it is the best known model for calculation of the percentage of developing breast cancer in women, from the combination of pre-existing factors.¹³

The population of the study with 105 medical records of women with breast cancer enrolled between the period 2003 to 2011, in the Center for Teaching, Research and Women Extension and Breast Cancer - MUCAMA projecto, rehabilitation group of Nursing Course of Federal University of Alfenas-MG.

The data were collected through consulting the records of attendance, referring to customers who have used sometime the rehabilitation service. The spreadsheets were organized to calculate the risk of developing

breast cancer, using the Gail Model *software*, version 1.0, for each assisted women and relating to the actual risk of the woman who had already developed cancer, checking the reliability of the program or not.

The data were entered into a spreadsheet and the risk values calculated in percentage.

RESULTS

105 records of women who participated in the Center for Teaching, Research and Women Extension and Breast Cancer -MUCAMA project, were consulted. The group of women studied had an average age of cancer diagnosis of 43.75 years old; where the smallest age was 33 years old and the largest was 78 years old. The laterality of the breast was the right one with 62.8%; data coincident with another study.¹³

Of the 105 women analyzed, only 51 of them were at risk of getting breast cancer, according to the *software*. This number is considered moderate, because this sample, 100% of women had cancer previously, according to Table 1.

Table 1. Percentile of current Gail in women with early breast cancer for the next 5 years. MUCAMA. Alfenas-MG 2011. n = 105

	Risk <1,0	Risk =1,0	Risk >1,0
Total of women	49	5	51

All results greater than 1.0 are considered at risk. The average of results for women analyzed was 0.74, with the standard deviation of 0.38. The Gail *software* offers the percentile for women of the same age and race on protective factors for cancer. When the index is applied in this group 80.18% had less than 1.0 index, showing that even having protective factors for cancer, this is not only this indicative to develop the disease.¹⁴

For the next five years, the risk of a woman of the same age and same race to show cancer, it would be 15 cases, which is equivalent to 14.28% of the total. However, all the women in the sample had breast cancer.

The age is a factor recognized for the cancer. The more advanced years of life, the greater the chances of having cancer. The Gail model gives beyond the current risk in five years, the vital risk that is the risk for the 90 year old of the case studied.

The index Gail calculates that for ninety years old, normal women of the same race and age the average percentage is 5.54% for the appearance of cancer. In the women studied, as shown in Table 2, the average percentage of cancer risk passes from the current 0.74% to 8.78% of vital risk, a fact explained by them to have a history of previous cancer.

This study, 40% of cases had a higher percentage than the average of vital risk¹⁷, according to Table 2. There were cases where the vital risk was twice the expected average (19.3%), to have breast cancer with ninety years old. It is expected fact because these women already have a diagnosis of breast cancer.

Tabela 2. Table 2. Number of cases related to the average vital risk of Gail for women with early breast cancer. MUCAMA. Alfenas-MG 2011. n = 105

	Risk < 8,78%	Risk = 8,78%	Risk >8,78%
Total of women	63	0	42

In patients with initial stage III, with low index of Gail, the disease had a quick and sometimes fatal progression.

DISCUSSION

The Gail Index is an instrument of great value at the collective level for detection of the risk of developing breast cancer in women. However, it should be used by big populations and in regions where there are shortages of health professionals. It is not possible to restrict the search for early diagnosis only to this index, because in individual level it underestimates the value of the risk of breast cancer.

It should be considered that individual factors of women and the fact that these women have a predisposition to cancer. Since they already have the disease, suggest the need for systematic monitoring in order to prevent or to early diagnose the emergence of another cancer.

It was observed that although some women have a high percentile for recurrence up to 90 years old with index more than 10, systematic monitoring has allowed a break from the perspective of appearance of the disease. It is understood that the Gail model becomes important to prevent it to large populations, when it is not possible to examine all women and that age is of paramount importance, but the primary care professionals should conduct annual clinical examination the breasts of women, especially those working in family health strategy, as well as consider individual factors, environmental and community risk towards early detection.¹⁵⁻⁶

It must be considered that the study population had a diagnosis of cancer and their prognosis is followed independently of the Gail index, because despite being on a treatment, many are in the phase under the five years of monitoring. When the result of the *software* is analyzed individually it underestimates the true risk of having breast cancer. The results were not very different from those that previous research has shown, which indicate the Gail Model as a tool to be considered in population level and not individual level.¹⁴⁻¹⁷

It is noteworthy that in the health care of women with breast cancer, it is essential that nursing does effective interventions that seek to promote rehabilitation. In that sense, the actions include care planning in nursing assistance with information about medicine, treatment, strategies to face it that promote and minimize side effects and encourage self-care.¹⁸

CONCLUSION

The Gail model was shown to be a useful tool, but their data should be analyzed with caution, In this study at the individual level underestimated the data that point to the possibility that a woman has breast cancer.

As in this study all women had had a breast cancer, the Gail index was not a good tool for monitoring and evaluation of recurrences, it is used only in screening, for its ease of use and quick analysis to indicate procedures.

Because of monitoring the evolution of the disease along to patients, it is noted that in some cases the percentile of the software was high, but the pathological condition of the patient is stable. In other cases, the index was low and breast cancer had a dramatic and fatal progression, which was associated with the stage of the disease.

It is guided that the Gail index should be used in primary health care to outline a risk profile of the population and facilitate checking activities.

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