

# Gail Model to Determine the Risk of Breast Cancer

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## Abstract

**Introduction:** Breast cancer is the most common cancer among women in the majority of countries. According to data collected by Guilan Health Services, its incidence has been rising in the province since 2002. Despite the efforts to detect and manage breast cancer in early stages, it still remains as the second most common cause of deaths from cancers. Gail model is one of the policies innovated with the aim of estimation of the life long breast cancer risk in women. This study was conducted to investigate the validity of Gail model in predicting the risk of breast cancer in women living in Guilan province, northern Iran.

**Materials and Methods:** The study design was observational and cross-sectional, conducted in Guilan province. The population studied consisted of 260 women referred to teaching hospitals affiliated to Guilan University of Medical Sciences. They were divided into patient and control groups and were observed for one year period (2011-2012). Risk assessment was carried out using the computerized Gail software, designed by the American National institute for cancer.

Risk factors included: age of the first menarch, age of the first full term delivery, family history for breast cancer, the age of menopause and breast biopsies showing atypical hyperplasia. Test results greater than 1.7% was representative of the increased risk. The data were analyzed using SPSS software, version 16.

**Results:** The mean age was 48.51± 8.3 for 260 patients and controls under study. Medical Gail score for the first 5 years was 0.76± 0.46 and the lifelong risk was 1.135± 2.3 in both groups. Considering the sensitivity and specificity of different cut off values, the score with the best specificity for usage in Guilan population was found to be 1.25%.

**Conclusion:** Given the higher median Gail score and the number of population at risk for breast cancer in our study, in comparison with the results of investigations of other countries, screening for the breast cancer risk is highly recommended in our population to prevent increasing death rates from breast malignancy. However, only 6.9% of our patients had Gail score more than 1.7% and it is clear that risk assessment on the basis of this figure at Guilan province cannot be valid and accurate. So we suggest cut off score of 1.25% to be used for risk assessment in Guilan population.

**Conflict of interest: non declared**

**Key words:** Breast Neoplasms/ (Gail Model)/ Risk Factors

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