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### USEFULNESS OF GAIL MODEL BREAST CANCER RISK ASSESSMENT TOOL IN ESTIMATING THE RISK FOR DEVELOPMENT OF BREAST CANCER IN WOMEN OF KERALA, INDIA.

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**ABSTRACT:** Usefulness of Gail model Breast cancer Risk assessment tool in estimating the risk for development of Breast Cancer in women of Kerala, India. Background:Breast cancer is the commonest cancer among females in the state of Kerala,India.Gail et al. model is considered the best available means for estimating an individual woman's risk of developing breast cancer.Such estimates are useful in designing prevention trials, and in targeting screening and prevention efforts<sup>1</sup>. Objectives:To determine the usefulness of Gail model Breast cancer risk assessment tool in identifying women at high risk for breast cancer in Kerala,and to study the risk factors of breast cancer to formulate a Logistic regression model for prediction of women who are at high risk for breast cancer.Methods:A case control Study was conducted at Regional Cancer Center Trivandrum by including all breast cancer patients admitted for surgery from 1st of September 2003 to 31st December 2004(Case n=660 and controls n=920). Participants were interviewed using a proforma. Gail's tool was used to calculate risk.The participants were grouped as High, Normal or Low risk with regard to their risk in comparison with the general population score given in the calculator.Sensitivity and specificity of the model was found out.Unconditional logistic regression was used to estimate odds ratio 95% confidence intervals (C.I.s) and for the final Model.Results:The Mean Score of cases was 0.872(SD 0.460)and that of Controls was 0.731(SD0.403).(t-5.392;Sig.000).Overall sensitivity is 1 4.2 and specificity is 89.2. The major risk factors of breast cancer were age, irregular periods, previous history of breast biopsy, presence of first degree relatives with breast cancer, history of abortion,absence of live birth,late age at first live birth,post menopausal status and absence of breast feeding.Breast feeding provides protection against Breast Cancer.Age of menarche was not found to be as a risk factor for breast cancer.A new model was made using the identified risk factors:  $XB = (-3.657) + (0.044 \times \text{Age}) + (0.445 \times \text{PERIODS}) + (1.432 \times \text{BIOPSY}) + (0.797 \times \text{FRLBCYN}) + (0.284 \times \text{ABORT}) + (0.569 \times \text{LIVEBIYN}) + (0.524 \times \text{STATUSME}) + (0.680 \times \text{BFYESNO}) + [(0.510 \times \text{CODE4FLB}(1)) \text{ or } (1.090 \times \text{CODE4FLB}(2)) \text{ or } (1.310 \times \text{CODE4FLB}(3))]$  Conclusion:Gail Model cannot be used to predict high risk women in Kerala.A new model formulated based on the identified risk factors should be more useful in community wide screening programmes in Kerala.

**Conflict of Interest:** "None declared"

**REFERENCES:** 1.Validation of the Gail et al. model for predicting individual breast cancer risk. Spiegelman D, Colditz GA, Hunter D, Hertzmark E. Department of Epidemiology, Harvard School of Public Health, Boston, Mass. 02115. J Natl Cancer Inst. 1994 Apr 20;86(8):600-7;Comment in 7.J Natl Cancer Inst. 1994 Apr 20;86(8):573-5. J Natl Cancer Inst. 1994 Sep 7;86(17):1350. J Natl Cancer Inst. 1994 Sep 7;86(17):1350; discussion 1350-2.