

## Qualitative and quantitative dermatoglyphic traits in patients with breast cancer: a prospective clinical study

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### Introduction

Breast cancer is one of the most extensively studied cancers and its genetic basis is well established. Dermatoglyphic traits are formed under genetic control early in development but may be affected by environmental factors during first trimester of pregnancy. They however do not change significantly thereafter, thus maintaining stability not greatly affected by age. These patterns may represent the genetic make up of an individual and therefore his/her predisposition to certain diseases. Patterns of dermatoglyphics have been studied in various congenital disorders like Down's syndrome and Klinefelter syndrome. The prints can thus represent a non-invasive anatomical marker of breast cancer risk and thus facilitate early detection and treatment.

### Methods

The study was conducted on 60 histo-pathologically confirmed breast cancer patients and their digital dermatoglyphic patterns were studied to assess their association with the type and onset of breast cancer. Simultaneously 60 age-matched controls were also selected that had no self or familial history of a diagnosed breast cancer and the observations were recorded. The

differences of qualitative (dermatoglyphic patterns) data were tested for their significance using the chi-square test, and for quantitative (ridge counts and pattern intensity index) data using the t- test.

### Results

It was observed that six or more whorls in the finger print pattern were statistically significant among the cancer patients as compared to controls. It was also seen that whorls in the right ring finger and right little finger were found increased among the cases as compared to controls. The differences between mean pattern intensity index of cases and controls were found to be statistically significant.

### Conclusion

The dermatoglyphic patterns may be utilized effectively to study the genetic basis of breast cancer and may also serve as a screening tool in the high-risk population. In a developing country like India it might prove to be an anatomical, non-invasive, inexpensive and effective tool for screening and studying the patterns in the high-risk population.