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Using Data Mining and Genetic Algorithm for Diagnosis of Breast Cancer

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Abstract

Introduction: The correct prediction of breast cancer disease is of great importance. The presence of different signs and characteristics of the disease has made it difficult for physicians' to diagnose. Data mining allows the analysis of the patients' medical data for medical decisions. The goal of this paper is to present an accurate model designed for predicting breast cancer disease.

Methods: In this study, the medical case files of 574 patients with breast cancer diseases with 32 features were examined. Patient information was acquired from the Mortaz General Hospital Standard Database and selected. Genetic Algorithm and Data mining are used for the purpose of presenting a model for the prediction of Erythemato-Squamous disease.

Results: The suggested model was compared with the Decision Tree, Nayo-Biz and Nearest Neighbor methods. Results show that the prediction accuracy of the suggested model was 0.973, also for other methods the accuracy of prediction was 0.913, 0.929 and 0.951 respectively.

Conclusion: In the prediction of breast cancer disease, the suggested model acquired the least error and the most accuracy and validation in comparison with other methods. The Nayo-Biz method has the most error and least accuracy.

Keywords: Breast Cancer, Genetic Algorithm, Data Mining, Prediction.