

عنوان مقاله:

Association analysis of obesity/overweight and breast cancer using data mining techniques

محل انتشار:

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خلاصه مقاله:

Introduction : Growing evidence has shown that some overweight factors could be implicated in tumor genesis, higher recurrence and mortality. In addition, association of various overweight factors and breast cancer has not been extensively explored. The goal of this research was to explore and evaluate the association of various overweight/obesity factors and breast cancer, based on obesity breast cancer data set. Material and Methods : Several studies show that a significantly stronger association is obvious between overweight and higher breast cancer incidence, but the role of some overweight factors such as BMI, insulin-resistance, Homeostasis Model Assessment (HOMA), Leptin, adiponectin, glucose and MCP-1 is still debatable, So for experiment of research work several clinical and biochemical overweight factors, including age, Body Mass Index (BMI), Glucose, Insulin, Homeostatic Model Assessment (HOMA), Leptin, Adiponectin, Resistin and Monocyte chemo attractant protein-1 (MCP-1) were analyzed. Data mining algorithms including k-means, Apriori, Hierarchical clustering algorithm (HCM) were applied using orange version 3.22 as an open source data mining tool. Results : The Apriori algorithm generated a list of frequent item sets and some strong rules from dataset and found that insulin, HOMA and leptin are two items often simultaneously were seen for BC patients that leads to cancer progression. K-means algorithm applied and it divided samples on three clusters and its results showed that the pair of has the highest effect on separation of clusters. In addition HCM was carried out and classified BC patients into 1-32 clusters to So this research apply HCM algorithm. We carried out hierarchical clustering with average linkage without punning and classified BC patients into 1-32 clusters in order to identify BC patients with similar charestrictics. Conclusion : These finding provide the employed algorithms in this study can be helpful to our aim

کلمات کلیدی:

Breast Cancer, Overweight, Obesity, K-means, Apriori

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