**Abstract**

Data mining using association rule is widely applied in medicine, particularly in cancer epidemiology. It is reported that this technique has certain uncertainty. To minimize the uncertainty, fuzzy logic is used with association rules. To demonstrate the efficiency of these methods further, geographical information system tool is used to spatially view results obtained from above-mentioned techniques. For the present study, cancer data were taken due its disparity among different populations/locations and also because it is a serious concern that affects our socio-economic well being. Cancer is a family of diseases arising due to varied factors and there is no one cause and cure until the definite causative factor is determined. Data mining approach using association rule technique was applied to extract association between diet and incidences of cancer and was interpreted using fuzzy logic. The spatial data were displayed through map objects, and apriori algorithm is used to evaluate, visualize, and analyze the results from the data mining process. In this regard, data consisting of 3000 cancer cases were scrutinized which involves 16 parameters, 160 types of cancer, and 5 types of dietary habits including smoking, mixed diet, alcohol, betel nut, and tobacco chewing. Association rule mining reduces 800 combinations of cancer and habits to 129 cancer types and 3 habits and plots the respective location in the map through map objects. Fuzzy logic is used to find the spatio-habits linked. Association rule integrated with fuzzy logic reveals the influence of diet on cancer and its spatial pattern of the disease distribution. This technique enables us to provide the interpretation for the severity of disease that needs further attention and decision making.