

The Use of Geographic Information System and Spatial Statistic for Analyzing Leukemia in Kuwait for the Period of 2006-2012

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Abstract : This research focuses on the study of three main issues: 1) The temporal analysis of leukemia for a period of six years (2006-2012), 2) spatial analysis by investigating this phenomenon in the Kuwaiti society spatially in the residential areas within the six governorates, 3) the use of Geographic Information System technology in investigating the hypothesis of the research and its variables using the linear regression, to show the pattern of linear relationship. The study depends on utilizing the map to understand the distribution of blood cancer in Kuwait. Several geodatabases were created for the number of patients and air pollution. Spatial interpolation models were used to generate layers of air pollution in the study area. These geodatabases were tested over the past six years to reach the conclusion: Is there a relationship with significant significance between the two main variables of the study: blood cancer and air pollution? This study is the first to our best knowledge. As far as the researchers know, the distribution of this disease has not been studied geographically at the level of regions in Kuwait within six years and in specific areas as described above. This study investigates the concentration of this type of disease. The study found that there is no relationship of significant value between the two variables studied, and this may be due to the nature of the disease, which are often hereditary. On the other hand, this study has reached a number of suggestions and recommendations that may be useful to decision-makers and interested in the study of leukemia in Kuwait by focusing on the study of genetic diseases, which may be a cause of leukemia rather than air pollution.

Keywords : Kuwait, GIS, cancer, geography

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