

Original Paper

Relationship between rainfall and temperature with the incidence of cancer in Golestan Province, northern Iran

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Abstract

Background and Objective: Golestan province in north of Iran is known as a high risk area for cancers. Differences in climatic characteristics including rainfall, temperature and humidity may affect the diet, types of vegetation and lifestyle of residents in this area. The aim of this study was to determine the relationship between rainfall and temperature with the incidence of cancer in Golestan province, north of Iran.

Methods: In this descriptive-analytic study, climatological data and Data of cancer incidence in Golestan province, north of Iran were collected during 2005 and 2010.

Results: Higher incidence of cancers was seen in areas with dried climate including Eastern parts of the province and the Turkmen sahra ($P < 0.05$). A significant negative correlation was found between the rainfall and the incidence of esophageal cancer ($r = -0.64$, $P < 0.04$). The average rainfall was significantly lower in high-risk area for esophageal cancer than in low-risk area ($P < 0.05$). The incidence of gastric cancers was significantly higher in dry climate than humid climates ($P < 0.05$). The incidence of esophageal and intestinal cancers was non-significantly higher in dry climate than humid climates. The incidence of breast cancer was non-significantly lower in dry climate than humid climates.

Conclusion: This study showed that higher incidence of cancers in dry climates when compared with humid climates. Also, environmental factors may play a role in high incidence rate of cancers in this area.

Keywords: Cancer, Rainfall, Temperature, Golestan province, Iran

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