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Epidemiologic Approach to the Relationship between Diabetes and Cancer: A Systematic Review Study

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Keywords: Cancer; Diabetes; Cancer Patients; Epidemiologic Approach; Relationship Between Diabetes and Cancer

Abstract

Introduction: Diabetes patients have been reported to increase the risk of cancer by a large proportion than non-diabetic patients. In this study, we intend to examine the relationship between these two diseases by examining several studies. Therefore, this systematic review was conducted to determine the epidemiological approach to the relationship between diabetes and cancer.

Materials and Methods: This study was a systematic review based on the Broome method. In this study, using the papers published in the last 17 years in relation to the epidemiological approach to the relationship between diabetes and cancer. Searching articles in search engines, scientific sites and databases, Google Scholar, Embase, Sciencedirect, PubMed, in Persian and English. In the first phase, 49 articles were found. Of these, 14 articles related to the topic that were published in the last 17 years were reviewed.

Results: In this study, 14 articles were reviewed that revealed a link between diabetes and cancer and a serious risk for cancer. One of these studies showed that there was a significant relationship between type 2 diabetes and colon adenomas. Exposure to insulin and thiazolidinedione was associated with the formation of adenoma, and none of the anti-inflammatory drugs and HbA1c levels were predictive of adenoma.

Conclusion: In this study, there was a significant relationship between diabetes and various types of cancer. Therefore, it is necessary to emphasize the screening of breast cancer and other types of cancer by conducting tests and diagnostic work for the rapid diagnosis of cancer among diabetic patients. Also, diabetes has increased the risk of developing another dangerous disease, such as cancer.

Introduction

Uncontrolled diabetes mellitus is a chronic disease that affects many organs and requires care throughout the life cycle in order to limit and cope with chronic complications. It is a disorder of insulin production and function syndrome. Which led to an increase in uncontrolled outbreaks due to decreased physical activity and consumption of unhealthy foods [1-9]. The global prevalence of diabetes has increased significantly over the past two decades, from around 30 million cases in 1985 to 177 million in 2000 and based on research conducted in the year 2030 reaches over 360 million cases. And in 2014, the global prevalence of diabetes among adults older than 18 years was estimated at 9% [10-19]. and the prevalence of this disease in Iran, according to the statistics released by the health department of the Ministry of Health in a population over the age of 30, is more than 14% or more in the female population, and it is associated with multiple short-term and long-term complications, which in many cases is not reversible [20-38]. Among diabetic patients, depression is one of the most common psychiatric disorders. That depression is a mood that involves rage and escape from activity or unconsciousness and reluctance, which can affect one's thoughts, feelings, feelings, and well-being. This mental illness is caused by various events

that either originated from loneliness and rejection, or from an uncontrollable and uniformity of life, in which one takes happiness and freshness from one person and makes him black and lonely.

Depression is one of the most common and debilitating problems for youth and adolescents. And depression and occupational stress may cause some disorders in the mental and physical health of individuals, and high occupational stress is known as a known psychosocial factor in the development of cardiovascular disease [39-45]. Diabetes is also one of the most common endocrine complications in thalassemic patients, and thalassemia is one of the inherited blood diseases. The disease is a genetic condition in which the red blood cells in the patient's blood do not lose their original form and cannot carry oxygen, which β-thalassemia is a group of hereditary blood disorders caused by the reduction or synthesis of the beta-hemoglobin chain of blood [46-54]. In some studies, there is a link between diabetes and cancer, and it seems that one of the complications of diabetes is the appearance of various types of cancer. Therefore, in this study, we intend to examine the relationship between these two diseases by examining several studies.

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Materials and Methods

In this study, using the papers published in the last 17 years in relation to the epidemiological approach to the relationship between diabetes and cancer. It was conducted in English and Persian by searching articles in search engines, reputable scientific sites and databases, Google Scholar, Embase, Scientific Papers, Sciencedirect, PubMed. In the first phase, 49 articles were found. Of these, 14 articles related to the topic that were published in the last 17 years were reviewed. This study is a systematic review in order to achieve the goal of the study and to improve the accuracy of its study and its comprehensive understanding, this integrated overview study was conducted based on the Broome method. This method is carried out in three stages of the search of texts, data evaluation and data analysis, so that in the search phase, the texts of post-retrospective studies are examined in four stages in terms of inclusion criteria and after obtaining entry conditions The content of the study is evaluated and the data is analyzed at the end. Studies in the field of research were written in English or Persian, access to their full text was possible and published in the last 17 years, entered the study, and unnamed, unannounced and non-academic studies were deleted. To achieve relevant studies, a wide range of keywords including Cancer, Diabetes, Cancer Patients, Epidemiologic Approach, Relationship Between Diabetes and Cancer was used as a one-to-one search, combined with the method "And" and "OR".

Results

In some studies, there is a link between diabetes and cancer. Therefore, in this study, we intend to examine the relationship between these two diseases by examining several studies. In this study, we intend to examine the relationship between these two diseases by examining several studies. Therefore, this systematic review was conducted to determine the epidemiological approach to the relationship between diabetes and cancer. Studies have shown that diabetes increases the chance of different types of cancer. For example, several studies have shown that diabetes increases the risk of colorectal cancer, such as study [55], which showed that the incidence of colorectal cancer in diabetic patients was 2.1 times higher than that of non-diabetic controls, as well as in another study Which showed a 1.23 times higher chance of having colorectal cancer in diabetic patients [56].

Another study showed that diabetes was associated with an increased risk of colorectal cancer, and in this study, 207 patients with colorectal cancer had 48 patients with diabetes, compared to 207 controls, only 21 cases had diabetes [57]. The study also found that diabetes is associated with an increased risk of breast cancer, and the analysis of all 20 studies in this study showed that women with diabetes (versus diabetic men) had 20 Percentage increased risk of breast cancer [58]. Also, another study showed a significant relationship between type 2 diabetes and colon adenomas [59]. In another study, in men, the risk of developing the entire cancer in people with a history of diabetes increased by 27%, as well as in women, the incidence of cancer significantly increased at the borderline, while The incidence of gastric cancer and liver cancer was statistically significant and the incidence of ovarian cancer was observed at the border [60].

In another study, the association between diabetes and primary liver cancer was investigated, of which sixty-four cases of hepatocellular carcinoma were reported in 87 diabetic patients [61]. In the study, there was no significant association between diabetes and bile, esophageal and stomach cancers, diabetes intensity, duration or need for drug therapy, it seemed that there was a stronger association with the risk of developing liver cancer, Pancreas and rectum [62]. In the study, the risk of developing pancreatic and liver cancers among diabetic patients also increased. The increased risk for pancreatic cancer was fully apparent to people with diabetes, on the contrary, increased risk of liver cancer was independent of the distance between diabetes and the diagnosis of cancer, as a result, diabetes was associated with an increased risk of developing liver cancer among men [63]. Also, in a study, diabetes mellitus was associated with an increased risk of colorectal neoplasm [64]. Of course, there was no significant relationship between diabetes and cancer in studies, for example, in the study of Dash et al., Conducted on African Americans, there was no significant relationship between diabetes and colorectal

cancer [65]. Also, according to studies [66], there was a significant and positive correlation between high fat diet and consumption of red meat with colorectal cancer.

Discussion

Uncontrolled diabetes mellitus is a chronic disease that affects many organs and requires care throughout the life cycle in order to limit and cope with chronic complications. It is a disorder of insulin production and function syndrome. Which led to an increase in uncontrolled outbreaks due to decreased physical activity and consumption of unhealthy foods [1-9]. In some studies, there is a link between diabetes and cancer, and it seems that one of the complications of diabetes is the appearance of various types of cancer. Therefore, in this study, we intend to examine the relationship between these two diseases by examining several studies. In this study, we intend to examine the relationship between these two diseases by examining several studies. Therefore, this systematic review was conducted to determine the epidemiological approach to the relationship between diabetes and cancer.

According to a study [55-57], which showed that diabetes may increase the chances of developing colorectal cancer, colorectal cancer is a common and deadly disease with a high incidence of occurrence in various parts of the world [69] and Generally speaking, cancers can occur when parts of the body begin to grow uncontrollably, and one of the common cancers in women and men is colorectal cancer. The best way to prevent the disease is through proper nutrition and the use of fiber in nutrition, as constipation is one of the most important causes of colorectal cancer, it should be prevented. Also, according to study, which showed that diabetes was associated with an increased risk of breast cancer, it can be said that people with breast cancer at the age of menopause are more likely to have diabetes. Even statistics show that people with diabetes also have a chance of developing breast cancer, about 20% of these people develop breast cancer.

And lifestyle changes can reduce the risk of breast cancer. One of the factors that people with breast cancer are at risk for diabetes are estrogen resistance in the stages of chemotherapy. Taking some medications such as glucocorticoid in chemotherapy increases your blood sugar, taking these drugs to prevent inflammation and nausea. When the body resists insulin resistance, it is prone to spreading diabetes and a variety of cancers that can occur in people with breast cancer. Also, in diabetics, with increased levels of insulin, breast tissue changes that increase the risk of developing breast cancer. The statistics show that people with advanced breast cancer, and at the same time diabetes, have larger tumors than other breast cancer patients. In these people, the possibility of spreading the disease also increases the incidence of diabetes. Overall, it can be said that the study showed that diabetes is associated with a serious risk of developing a variety of cancers [64].

Conclusion

In this study, there was a significant relationship between diabetes and various types of cancer. Therefore, it is necessary to emphasize the screening of breast cancer and other types of cancer by conducting tests and diagnostic work for the rapid diagnosis of cancer among diabetic patients. Also, diabetes has increased the risk of developing another dangerous disease, such as cancer.

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Conflict of Interest

There are no conflicts of interest in this article.

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