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Statistical Study of Diabetes and Diabetic Foot Problems in Afiya Hospital, Huon

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Abstract

Diabetes is a chronic disease that causes high blood sugar levels and can lead to serious health problems such as cardiovascular disease and kidney disease. This disease is accompanied by a lack of insulin production or the body's inability to use it effectively. Diabetes is one of the most common diseases in the world, and it can be contracted at any age, but it is more common in adults and the elderly. This section deals with the definition of diabetes in general, its importance, and its impact on health. This study was conducted on diabetes and diabetic foot problems in the city of Hun and focused on the study problem related to diabetic foot. The study aimed to identify diabetic foot disease and provide a comprehensive overview of preventing and maintaining patients' health, educating the community, and raising health awareness in the region.

The data of this study were collected using the statistical method. The samples were 300 cases of different genders (the percentage of males was 87% and the percentage of females was 13%) as well as ages. The cases were interviewed and the necessary information was taken during the period from October to December of 2023. The results showed a relatively high number of males with diabetes and diabetic foot compared to females. A group of cases were also found to have ulcers of varying degrees, and some were admitted to operating rooms to clean the wound. The degrees of wounds in diabetic foot vary. Some cases had dead tissue removed, while others had part of the foot removed. A significant increase in blood sugar levels was also found among those with diabetic foot ulcers.

Keywords: Diabetes, Diabetic Foot, Gangrene, Ulcers

1. Introduction

The oldest document documenting the symptoms of diabetes is an Asiri text from India dating back to the 6th century BC, describing symptoms associated with low blood sugar. In ancient times, several civilizations recorded the symptoms of diabetes and various experiments to treat it [2, 1]. The Egyptian pharaohs discovered that diabetes was accompanied by weight loss and extreme thirst. Many ancient physicians suggested several treatments to alleviate the symptoms of diabetes, including fasting and taking natural herbs [5, 6].

Diabetes is one of the most serious health challenges facing our modern world in the twenty-first century, as it has become an epidemic that threatens all countries, peoples, races and social classes alike,

carrying with it diseases that are more dangerous than it, such as cardiovascular complications, diabetic neuropathy, eye and kidney diseases, and diabetic foot injuries, which may lead to premature death, kidney failure, blindness, amputation of the foot or actual disability, as international statistics from the World Health Organization and the International Diabetes Federation indicate that the number of people infected with this disease in the world in 2014 reached about 400 million [3,4].

When a person is diagnosed with diabetes for the first time, of course, many questions will gather in him and he will be filled with a sense of mystery about this disease, and the educated person should be the first to provide help and make him feel that he is not the only one who has been afflicted with it, but there are millions of people who suffer from such a condition and most of these people live normal and ordinary lives, but the excellent thing is that you will start providing systematic and gradual knowledge about diabetes. This guide will provide some basic information about this disease to start building the knowledge base first. Diabetes is defined as a disease characterized by high blood sugar levels and the body's inability to use sugar properly. This can occur due to a lack of insulin production in the body or due to the body's inability to use insulin effectively. These results in a variety of health complications, so individuals must understand the symptoms and factors affecting this disease in order to be able to deal with it effectively and take the necessary preventive steps [8, 9].

There are several factors that increase the likelihood of developing diabetes, including genetics, as having one of the parents with the disease increases the chances of developing it by up to 50% [7]. Obesity is also a major risk factor for type2 diabetes, and low physical activity and poor nutrition are also factors that contribute to increasing the likelihood. In addition, psychological stress and lack of sleep can increase the risk of developing diabetes, and one must also be careful of high blood pressure and high blood fats as risk factors.

Gangrene is one of the complications of diabetes, and it means the death of body tissues as a result of the cessation of blood flow to the tissues or due to their infection with a severe bacterial infection as a result of diabetic foot, and the patient is susceptible to wounds and ulcers in the feet that are difficult to heal if diabetic foot gangrene is not treated, and the chance of wounds becoming infected with bacteria increases due to the presence of wounds.

Diabetic foot is a group of pathological changes affecting the lower extremities, which usually result from complications caused by diabetes, such as peripheral neuropathy, damage to blood vessels, and loss of sensation in the feet. Diabetic foot is one of the long-term complications of diabetes, and results from changes in blood flow to the foot due to the effect of high blood glucose on the body [10, 11]. It is one of the pathological changes that affect the foot as a result of diabetes and includes decreased sensation, superficial and then deep inflammation, ulcers, avascular necrosis (bone death due to lack of blood flow), gangrene (death of living tissue due to lack of blood flow), and then amputation of parts or all of the foot. Dealing with diabetic foot requires professional medical care to prevent it from developing into advanced stages that may end in foot amputation.

2. Previous Study

The most common complication of diabetes is diabetic foot ulcers, which, if neglected, can lead to amputations. Diabetic foot issues affect 15% to 25% of people with diabetes worldwide. These complications often arise from a lack of awareness about the consequences of diabetes among patients [12, 13].

In 2019, approximately 463 million adults aged 20-79 had diabetes, a number projected to rise to 700

million by 2045 [14].

Long-term diabetes affects blood flow, especially in the arms and feet, a condition called peripheral vascular disease. Reduced blood flow to the feet causes pain, infection, and slow healing of wounds and ulcers in the diabetic foot which increasing the risk of foot tissue death and gangrene. Most people with diabetes have weaker immune systems than healthy people, so they are more likely to develop infections when exposed to bacteria and other germs [15]. High blood sugar also provides a suitable environment for bacteria to multiply, which increases the risk of diabetic foot ulcers becoming chronically infected and causing serious complications, such as tissue death and gangrene.

Diabetic foot ulcers (DFUs) are a common and serious issue for people with diabetes, often leading to limb amputation. Modern methods for diagnosing and treating DFUs are costly and time-consuming. Diabetic foot problems result in more hospital admissions than any other long-term diabetes complications and account for nearly 50% of diabetes-related hospital bed days. The diabetic foot is particularly vulnerable to complications due to its inability to withstand stress, affecting 15% of all diabetic patients and imposing a significant financial burden. Approximately 50% of lower limb amputations occur in individuals with diabetes, making diabetes-related lower extremity complications a pressing public health concern in both developing and developed nations [15, 16].

Complications of diabetic foot can be serious if not treated properly early. Potential complications include:

- Skin and bone infections, as nerve damage and poor blood flow, combined with weakened immunity, increase the risk of severe infection or inflammation in previously treated wounds in the diabetic foot. Abscesses, usually treated with drainage, but in severe cases, treatment may require removing some tissue. There are some modern treatment methods that can be tried, such as oxygen therapy.
- Foot deformity, as nerve damage and dysfunction can lead to weak foot muscles and imbalanced pressure on the foot, which can cause problems and deformity in the shape of the foot, such as hammer toes [10, 17].

As a result of severe inflammation in the bones and joints of the foot, and damage to the peripheral nerves, the possibility of fractures in the bones of the foot increases without feeling them, Foot deformities, gangrene and amputation of the foot as a result of poor blood flow and nerves in the foot, Which increases the risk of wounds and ulcers not healing and infection developing until it becomes difficult to treat. Then tissue death occurs and amputation of the foot is necessary to prevent the spread of infection to the leg and other parts of the body [19].

Research indicates that 79% of adults with diabetes reside in low- and middle-income countries. Additionally, 1 in 5 individuals over 65 has diabetes, and half of those with diabetes (232 million people) remain undiagnosed. Furthermore, 374 million people are at increased risk of developing type2 diabetes, which contributes to 4.2 million deaths annually [14, 18].

3. Field work

Data was collected through cases visiting Al-Afia Hospital in the city of Hun during the period from October to December 2023. The number of infected cases reached about 300 mixed cases between males and females as well as different ages. Most of the cases visiting during that period were men, 261 cases, while the number of women was 39 cases.

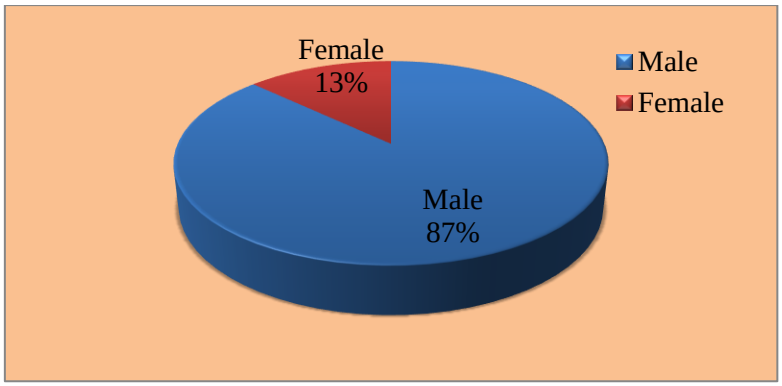

Fig 1: Percentage of Infected Cases Visiting the Hospital

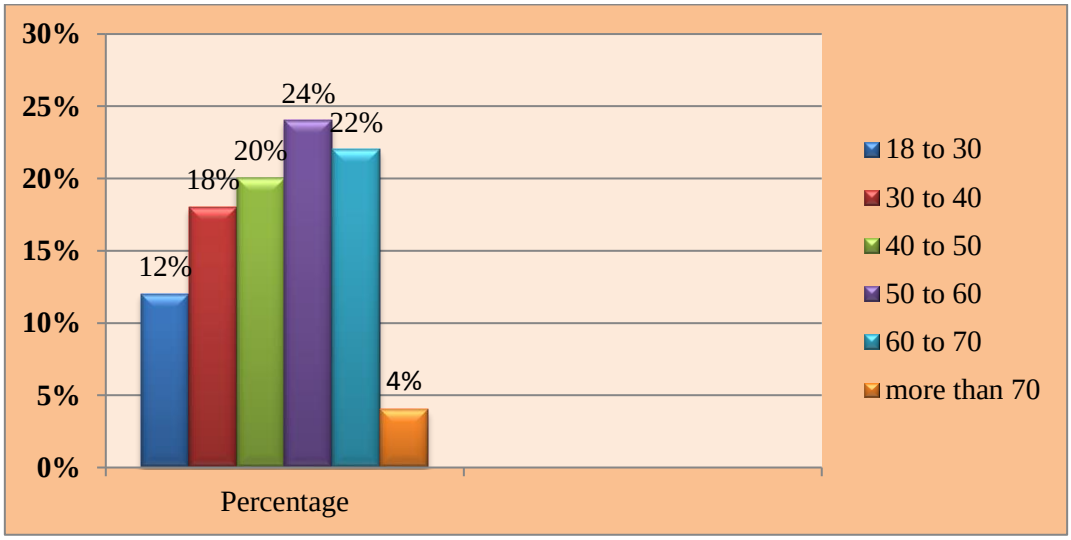

Fig 2: Age ratios of Different Cases

A set of data was taken during the visits of these cases to the hospital, and this data was as follows: Cases with ulcers, surgical cases, cases with pus, cases in which dead tissue was removed, cases in which wounds were cleaned, as well as cases that were transferred for treatment outside the region, i.e. travel to other regions for the purpose of treatment.

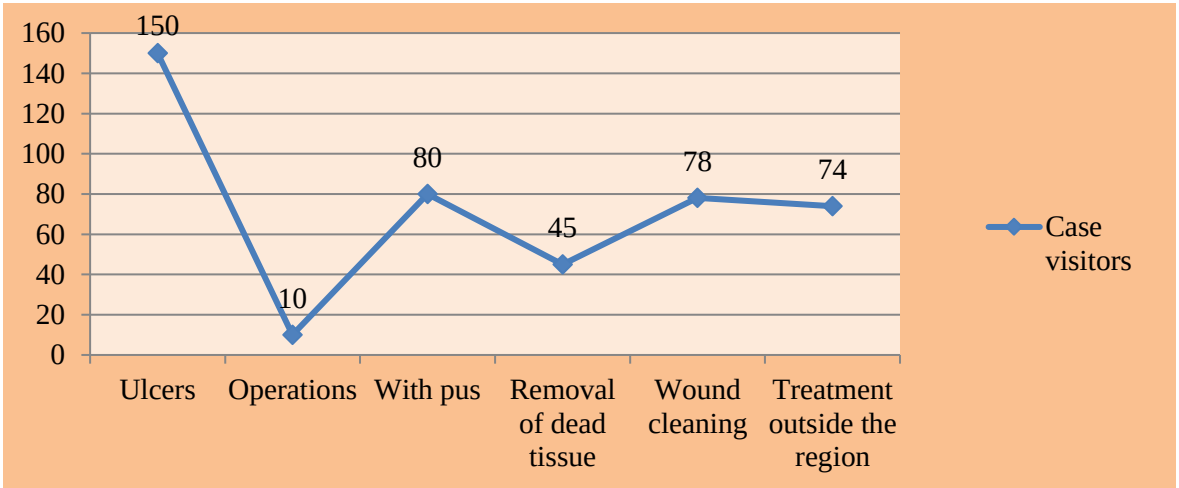

Fig 3: Data on cases that visited the hospital

From the above figure, it is clear that most of the cases with ulcers were higher than the rest of the cases, followed by cases with pus and cases of wound cleaning, while the cases that were referred for treatment outside the region were lower in percentage, which indicates an increase in the provision of treatment as well as the presence of a healthy environment to care for cases.

4. Conclotion

- By observing the statistical results obtained during the study period, it is clear that most of the cases visiting the hospital were men, which is completely consistent with another study conducted in the city of Sabha [20].
- The results showed that with advancing age, there is an increase in the risk of diabetes and diabetic foot, which indicates that periodic tests must be conducted to check blood sugar.
- The statistical results of the cases visiting the hospital indicated that it is necessary to intensify the study on the effect of vitamin D and its effect on diabetes and other complications of diabetes and on the components of immunity.
- To increase the relative comprehensive examination of cases, it became clear that it is very necessary to conduct genetic studies for patients with diabetes and diabetic foot to find out if there is a genetic predisposition to the disease.
- The need for information awareness about the organized use of antibiotics by doctors.

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