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ORIGINAL ARTICLE

Prevalence of Constipation in Diabetic Individuals at Endocrinology Clinic: A Cross-Sectional Study

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ABSTRACT

Aim: The purpose of this study was to determine the frequency of constipation in people with diabetes seen at an outpatient endocrinology clinic.

Study design: A cross-sectional study

Place and Duration: This study was conducted at , People's University of Medical and Health Science for Women Nawabshah Pakistan between April 2020 to April 2021.

Methodology: An outpatient endocrinology clinic conducted at our institute using questionnaire & Rome III criteria. According to Rome III, the following should be considered constipation symptoms: (1) fewer than three bowel movements per week, (2) an attempt to empty bowl, (3) hard or lumpy stools, (4) a belief that an evacuation is incomplete, (5) a belief that an evacuation is blocked, and (6) manual defecation procedures.

Results: Constipation was shown to be common among diabetes individuals in 31.2 percent of the 372 participants studied. Females outnumbered males in the sample (72.8 percent), as well as in terms of constipation frequency (80.2 percent). The prevalence of type 2 diabetes was 97.3 percent, and 80.2 percent of the participants were above the age of 50 years. Constipation was linked to poor glycemic control (HgA1c 7) in 112 participants.

Conclusion: In comparison to the general population, persons with diabetes mellitus who met the Rome III criteria had a higher rate of constipation. Inadequate glycemic control increases the incidence of constipation in people with diabetes mellitus, and further research is needed to prove this hypothesis.

Keywords: diabetes mellitus, constipation, prevalence,

INTRODUCTION

Diabetes Mellitus (DM), a common ailment, is becoming one of the world's most critical public health challenges. It is estimated that 173 million individuals are affected by this condition, with 300 million expected by 2030. Diabetes prevalence in Brazil was estimated to be over 8 million persons in 2005. (1) Neither insulin nor its receptors function well on the peripheral receptors in patients with diabetes mellitus, which results in hyperglycemia (type I DM). (2)

As a result of the disease's inherent difficulties, it is associated with issues that reduce productivity while also jeopardizing patients' quality of life and survival. Furthermore, because of the disease's chronic nature, it necessitates ongoing care, resulting in an extremely high cost to healthcare systems. (3) Patients with diabetes may suffer from a range of gastrointestinal issues. (4) In diabetics, constipation is the most prevalent of the gastrointestinal dysfunctions that have been described.(5)

The notion that diabetic neuropathy leads to intestinal motility problems has been proposed based on the similarities between gastrointestinal symptoms after vagotomy and sympathectomy and those reported in diabetes patients.(6) Participants from all over the world met in Rome in 1999 to agree upon the Rome III Criteria, which defined constipation.

The present study was conducted to determine the frequency of constipation in people with diabetes.

METHODOLOGY

The Research Ethics Committee reviewed and approved this descriptive, cross-sectional study.

Researchers collected data by asking patients at the Endocrinology Outpatient Clinic to complete a questionnaire, which included basic demographic information (gender, ethnicity, age). (1) less than three bowel movements per week, (2) an attempt to empty, (3) firm or lumpy stools, (4) a sense that an evacuation is incomplete, (5) a belief that an evacuation is impeded, and (6) manual defecation procedures are all considered constipation symptoms, according to Rome III. A total of 372 patients were involved in the study, with 271 females and 101 males. 297 of the participants were between the ages of 50 and 65, while 75 were between the ages of 15 and 49.

In order to diagnose and describe constipation as per the Rome III criteria, at least two of these symptoms must be present for a minimum of six months. (7) DM-related data, like glycated haemoglobin levels, were also analyzed to see if glycemic control had an impact on the development of constipation.

We included specific exclusion criteria to decrease confounding biases: pregnant individuals, past history of gastrointestinal illnesses, digestive tract operations, and mental problems, all of which are known to impact enteric physiology. SPSS 23 was used to compute and analyze the data.

RESULTS

Table 1 shows that 116 (31.2%) of the 372 diabetes individuals tested were constipated. There was a higher prevalence of constipation among women (72.8%), which was associated with a higher percentage of females in the sample (80.2%). (As shown in Table 2). The prevalence of Type II Diabetes was 97.3 percent, with 80.2 percent of patients being above the age of 50 years. The association between constipation and diabetes was found in 112 individuals with poor glycemic control (HgA1c 7).

Table 1: Frequency of diabetes type I & II

Variables	Numbers	Percentages
Type I diabetes	10	2.7
Type II diabetes	362	97.3
Total	372	100

Table 2: Proportion of constipated patients in each gender.

Variables	Numbers	Percentages
Male constipated	23	19.8
Female constipated	93	80.2
Total	116	100

DISCUSSION

Constipation was more common among diabetic's patients. Diabetes patients with glycated haemoglobin (HgA1c) levels greater than 7 had a higher risk of constipation than diabetic patients, according to our findings. The age group of 50 to 65 years old, as well as the female gender, prevailed, according to the survey's questions. In a study of 200 patients, Maxton et al. observed that those with autonomic neuropathy had more constipation than those without the disease or healthy controls. Constipation was reported in 22% of diabetics with autonomic neuropathy, which was significantly greater than in diabetics without neuropathy, according to the findings of this study. (8)

There has recently been a proposal that the management of blood glucose levels can have significant effects on digestive processes including gastric emptying, myoelectric activity, and the effect of food on the colon. (9, 10) Several investigations have shown that during hyperglycemia, stomach emptying is delayed in both normal people and diabetes patients. According to Dao et al., among individuals with type II diabetes, the threshold for delayed stomach emptying owing to hyperglycemia may be higher. Hyperglycemia increases stomach emptying for liquids and solids in healthy people and those with type 1 diabetes. This observation was considered as a physiological response to hypoglycemia. (11) When healthy people were exposed to hyperglycemic circumstances, Sims et al. found that their gastro colonic responses and colonic peristaltic reflex were compromised. (12)

Diabetic ketoacidosis and uremia can cause electrolyte imbalances, thereby impairing motor function. Advanced diabetes has been extensively studied in terms of its effects on gastrointestinal motor function, but the mechanism behind how symptoms develop remains obscure for many people.

Some gastrointestinal diseases are frequent in people who do not have diabetes and have been linked to psychological problems. Symptoms of peripheral neuropathy were less strongly associated with mental disorders than they were with proximal digestive tract diseases or changes in bowel habits in diabetes patients in the United States. Study by Clouse et al. examined 114 individuals with type I and type II diabetes, looking for signs of diabetic neuropathy or psychiatric problems as a cause for their gastrointestinal symptoms. Analyses of peripheral nerve conduction and objective measures of autonomic function together were used to confirm the presence of neuropathy. Anxiety and melancholy, both of which are well-known mental illnesses, were well-described in previous interviews with medical professionals. A study found that diabetics with anxiety and depression symptoms but no motility concerns had more severe gastrointestinal symptoms, showing that diabetes neuropathies are not necessarily the most significant symptom predictor. (13)

The prevalence of gastrointestinal problems in middle-aged persons aged 45–64 years was investigated by Janatuinen et al., who employed questionnaires to gather information. Abdominal discomfort, diarrhoea, and constipation were equally common in the experimental group as they were in the control group. Gallstones were more common in non-insulin-dependent women than in insulin-dependent women and the control group, with 29 percent, 5 percent, and 19 percent, respectively. As a result, they came to the conclusion that the range and incidence of gastrointestinal symptoms were similar to those seen in the general population. (14)

We identified 116 (31.2 percent) constipated diabetic patients and 256 (68.8 percent) non-constipated diabetic patients among the 372 diabetic patients, with 271 (72.8 percent) females and 101 (27.2 percent) males; patients older than 50 years were more likely to have constipation. For those who had poor glycemic control, 42 (37.5 percent) of the 112 people who were evaluated experienced constipation. Glycemic control was suboptimal in 35 of the patients (83.3 percent). Our constipation rate, which was 31.2 percent, was higher than the rates published in the scientific literature. In our study, we identified a link between poor glycemic control and or the occurrence of constipation, indicating that this laboratory finding may have a positive impact on the development of this symptom.

Despite the fact that gastrointestinal issues are widespread in diabetes patients, the pathophysiology of gastrointestinal motility has not been completely explored or understood, and further study is required to provide evidence to support this theory. Moreover, it is well understood that this is a complex condition.

CONCLUSION

We found that patients with diabetes mellitus who met the Rome III criteria had a higher incidence of constipation than other patients. According to study, the likelihood of constipation in people with diabetes mellitus increases significantly when glycemic management is insufficient. In order to establish a relationship between this variable and this hypothesis and to provide evidence for this hypothesis, more studies are necessary.

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