

## INCIDENCE OF PATIENTS WHO UNDERWENT DENTAL EXTRACTION WITH RANDOM BLOOD SUGAR LEVEL ABOVE 200 mg/dl

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### ABSTRACT

Diabetes mellitus (DM) is one of the most frequent pathologies that dentists encounter. Its clinical importance springs from the possible occurrence of acute complications, whose severity could mean an immediate risk for the diabetic patient's life and require urgent diagnosis and treatment. The aim of the current study is to find the Incidence of patients who underwent dental extraction with random blood sugar level above 200 mg/dl in Saveetha dental college and Hospitals, chennai. It is a single centered retrospective observational study conducted in saveetha dental college and hospital from April 2020 to February 2021. This study has got ethical clearance from an international review board. The study includes a sample size of 38 patients who underwent extraction with random blood sugar level above 200 mg/dl. The results of the current study showed that out of 20,000 patients 283 patients were known diabetic and 38 patients with random blood sugar level above 200 mg/dl had undergone dental extraction. Within study limits it was concluded that with proper diagnosis and precautionary measures extraction can be done in patients with random blood sugar levels above 200 mg/dl.

**Key words:** - Blood glucose level; diabetes; extraction; Novel method; Innovative technique.

### INTRODUCTION

Diabetes mellitus is a metabolic illness marked by the body's inability to manage blood glucose levels as a result of insulin insufficiency or resistance. (1) Type I diabetes, also known as insulin-dependent diabetes, is marked by an inability to produce insulin, whereas Type II diabetes, also known as non-insulin-dependent diabetes, is marked by relative insulin insufficiency and tissue insulin resistance. (2) Fasting blood glucose level of 180 mg/dl is a cut-off point for any selective dental extraction. However, Random blood glucose level of 234 mg/dl (13 mmol/l) is a cut-off point for an emergency tooth extraction. (3) Tightly controlled diabetic patients (blood glucose level below 70 mg/dl) are susceptible to hypoglycemia. (4)

Anomalies in glucose, lipid, and protein metabolism are also present. As a result, hyperglycemia develops, resulting in microvascular problems as well as a number of clinical neuropathic sequelae. (5) According to studies, half of diabetic patients require surgery, while the remaining two-thirds of those who do require surgery face complications related to their diabetes infection. (6) As a result, diabetes patients undergoing oral surgical procedures face significant challenges in terms of care and therapy. Delay in the healing of oral ulcers has been linked to factors such as delayed angiogenesis, decreased blood flow, reduced innate immunity, decreased growth factor synthesis, and psychological stress. (7) Diabetes, in most situations, causes the patient to become irritable. (8)

Diabetes that is not well controlled can cause serious complications and even death. Retinopathy, nephropathy, autonomic neuropathy, peripheral neuropathy, and cardiovascular disease are long-term consequences. (8,9) The dentist, along with other members of the health team, plays an important role in helping a patient maintain glycemic control by achieving optimal oral health and referring undiagnosed patients with diabetes-related issues to physicians for further examination. (8-10) The aim of the current study is to find the Incidence of patients who underwent dental extraction with random blood sugar level above 200 mg/dl in Saveetha dental college and Hospitals, chennai. Our team has extensive knowledge and research experience that has translate into high quality publications (11), (12), (13), (14), (15-24) (25), (26-28). (29,30)

## MATERIALS AND METHOD

It is a single centered retrospective observational study conducted in saveetha dental college and hospital from April 2020 to February 2021. This study has got ethical clearance from an international review board. The study includes a sample size of 38 patients who underwent extraction with random blood sugar level above 200 mg/dl. The case sheets were reviewed and cross verified by another examiner.

Retrospective Data of 20,000 patients between April 2020 and February 2021 were retrieved and the patient records were reviewed and analysed for overall patient-report for extraction.

The data collected were tabulated under following parameters - age, gender, treatment. Inclusion Criteria includes diabetic patients with random blood sugar level above 200 mg/dl. Exclusion criteria include personal habits, occupation, marital status. The data analysis was performed using SPSS software of version 23.

## RESULTS AND DISCUSSION :-

The results of the current study showed that out of 20,000 patients 283 patients were known diabetic and 38 patients with random blood sugar level above 200 mg/dl had undergone dental extraction.

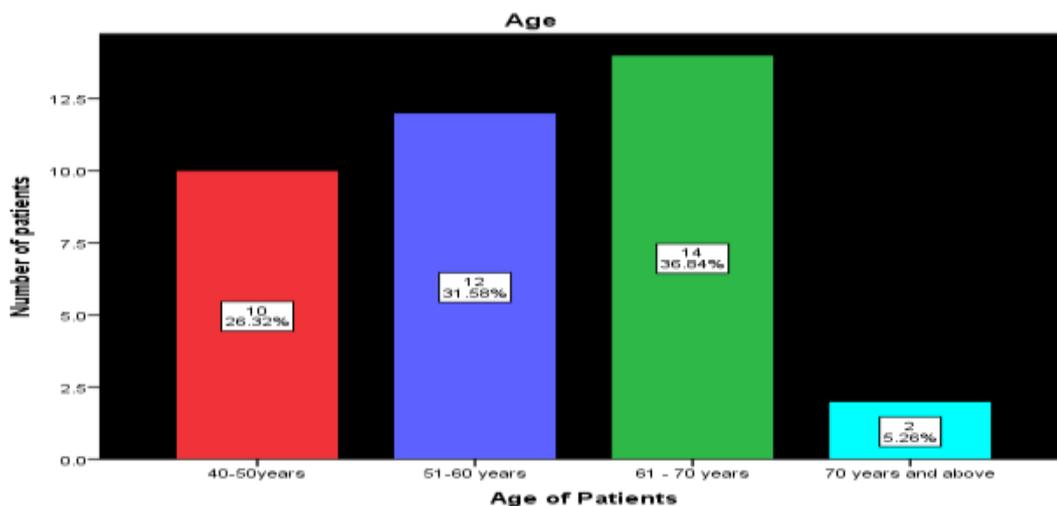
Infection is a risk factor for uncontrolled diabetes, as it causes blood sugar levels to rise. When the body tries to combat an infection, stress levels rise. The body creates a number of stress chemicals, including as cortisol and glucagon, which cause the liver to release glucose, causing blood glucose levels to skyrocket. (11)

Dehydration affects the body in general and the salivary glands in particular, making those with diabetes vulnerable to oral candidiasis. The increased colonisation of Candida species in the oral cavity is facilitated by a decrease in salivary flow rate and saliva PH (6,12).

(12)conducted research into the link between diabetes mellitus and severe multi-space infections of the oral maxillofacial region. Uncontrolled diabetics had greater infections, requiring more spaces, longer hospital admissions, and more problems than nondiabetic patients, according to the findings of this study.

According to a study, tooth extraction is one of the triggering factors for osteonecrosis of the jaws in older people with uncontrolled diabetes (ONJ). (13) As a result, tooth extractions must be performed within a safe blood glucose range. (14)

In diabetic patients with a stable glycemic control level, however, dental evacuation of teeth with no acute odontogenic infection does not require antibiotic prophylaxis. (15) The study's drawback is that it is single-centered with a small sample size, however it can be used for future research with a bigger sample size.



**Figure 1 -** Bar graph depicting the association between age of patients and number of patients who underwent extraction with Random blood sugar level above 200 mg/dl. The x - axis represents age of the patients and y - axis represents the number of patients who underwent extraction with Random blood sugar level above 200 mg/dl.. The age groups included 40-50 years which is represented by red colour, 51-60 years which is represented by dark blue colour, 61-70 years which is represented by green colour, and 70 years and above years which is represented by light blue colour.

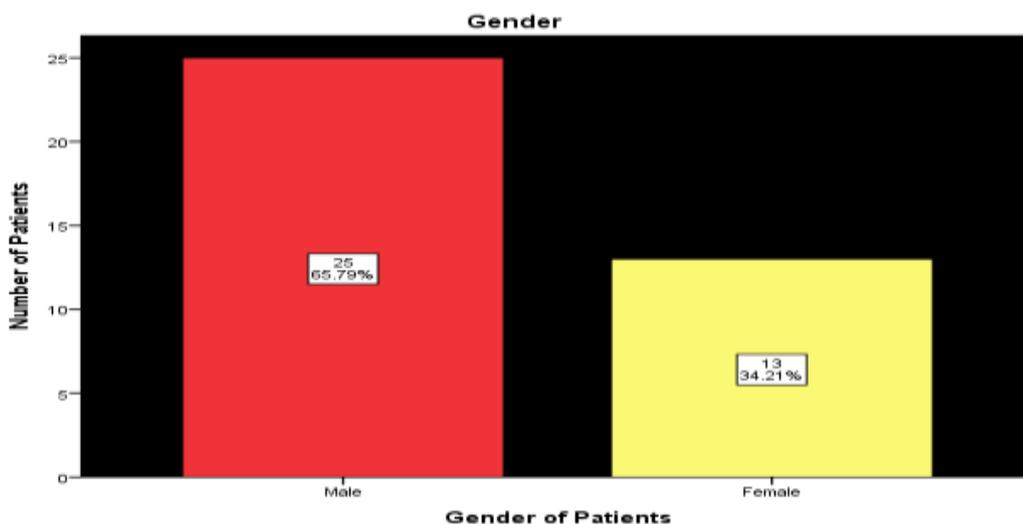


Figure 2 - Bar graph depicting the association between gender of patients and number of patients who underwent extraction with Random blood sugar level above 200 mg/dl. The x - axis represents age of the patients and y - axis represents the number of patients who underwent extraction with Random blood sugar level above 200 mg/dl. The red colour represents the number of male patients and yellow colour represents the number of female patients.

#### CONCLUSION:-

Within study limits it was concluded that with proper diagnosis and precautionary measures extraction can be done in patients with random blood sugar levels above 200 mg/dl.

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#### CONFLICT OF INTERESTS:-

All the authors declare that there was no conflict of interest in the present study.

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