ORIGINAL ARTICLE

SCREENING OF UNKNOWN DIABETIC PATIENTS IN A FREE MEDICAL CLINIC

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ABSTRACT

Objectives: To screen diabetic patients in a free medical clinic.

Methodology; This was a cross sectional, prospective and observational study done with very simple method in only one day, of all the people coming in a routine free medical camp with snow bell sample technique.

Results: we screened 04 new diabetic cases at very low cost by opportunity and simple screening through blood sugar random testing.

Conclusion: Blood Sugar Random is a good procedure to screen unknown diabetic patients.

Keywords; Diabetics, Diabetes Mellitus, Glucometer, Blood Sugar, Random Sample

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Introduction

Diabetes mellitus is a chronic condition characterized by elevated blood sugar levels due to the insufficient insulin production, impaired insulin action, or both. This metabolic disorder can lead to serious complications like heart disease, stroke, kidney failure, nerve damage, and vision problems[1].

The diagnosis of diabetes can be determined using several criteria. One method is the Fasting Plasma Glucose (FPG) test, where diabetes is diagnosed if the FPG level is 126 mg/dL (7.0 mmol/L) or higher after at least 8 hours of fasting. Another method is 2-Hours Plasma Glucose (2-hPG) test, and conducted during an Oral Glucose Tolerance Test (OGTT), which helps in the diagnosis of diabetes if the 2-h PG level reaches or exceeds 200 mg/ dL (11.1 mmol/L) following a 75 g glucose load. The Hemoglobin A1c (HbA1c) test also serves as a diagnostic tool, with diabetes diagnosed if the HbA1c level is 6.5% or higher. Additionally, a random plasma glucose test can indicate diabetes if the plasma glucose level is 200 mg / dL (11.1 m.mol/ L) or above in the patient exhibiting the classic symptoms of hyperglycemia or experiencing a hyperglycemic crisis[2].

Random glucose testing is a vital method for measuring blood glucose levels at any given point in the day, providing a quick and convenient way to assess an individual's blood sugar levels. Unlike other diabetes tests that require fasting or continuous monitoring, this test can be performed without prior preparation, making it especially useful for those who may need a prompt diagnosis, such as individuals with type-1 diabetes who require urgent insulin treatment[3].

Glucose, the body's primary energy source, fuels all cells, including those in the brain, heart, and muscles. The body maintains optimal blood glucose levels through the production of the insulin, which is a hormone that facilitates the uptake of glucose into cells. However, when insulin production or function is impaired or reduced, as in diabetes, glucose remains in the bloodstream, leading to conditions like hyperglycemia or hypoglycemia[4].

This article delves into the workings of random glucose testing, its procedure, and its significance in identifying the diabetes. It also explores implications of the test results, factors that can affect these results, and the potential health complications associated with diabetes. Understanding these aspects is crucial for managing and diagnosing diabetes, ultimately helping individuals maintain a healthy and active lifestyle[5].

Interpretation of Blood Random Testing

Meaning of Blood Glucose Level		
Blood glucose level (mg/dL)	**Blood Glucose Level (mmol/L)**	**Interpretations**
<53	<3	Severe hypoglycemia
<70	<3.9	Hypoglycemia
<125	<7	Normal
<200	<10	High (Take Action)
>200 - 500+	>10 - 27.7+	Metabolic Consequences

Methodology

On 2nd august 2024 Friday we got the blood sugar random done of all the people visiting us at our routine free medical clinic which is held on every Friday and Sunday from 2 to 5 pm.

We used glucometer (On Call Extra) with its specific blood checking sticks.

This was a cross sectional, prospective and observational study done with very simple method in one day of the all people coming in a routine free medical camp with snow bell sample technique. The cut-off point was 180mg/ dL of blood sugar. Above this was considered as diabetes mellitus.

Results

Gender	Number
Male	45
Female	17

Table-I

Area	Number

Urban	58
Rural	04

Table-II

Disease	Number
Known Diabetic with normoglycemia	02
Know Diabetic with hyperglycemia	02

Table-III

Age	Number
Less than 18 years	07
19-30 years	16
31-40 years	14
41-60 years	24
Greater than 60	01
(No Diabetic Child screened)	

Table-IV

Description	Number
Already known Diabetics	04
New Cases of Diabetes mellitus	04
B.S.R. of known diabetics above cut of point	02
B.S.R. of known diabetics below cut off point at the time of testing	02
B.S.R. of unknown diabetics above cut of point	04

Table-V

Discussion

Lawrence et al gave conclusion that diabetes mellitus screening is general practice by taking blood sugar random is seen. He took B.S.R. of 249 patients of more than 40 years of age. Out of these, 72 had B.S.R. more than 6.7m.mol/lit = 120.6 mg/dl. However out of these 72 the 18 new diabetic patients were screened which is 7.22%.[6] In our study out of 62 blood samples, we found 6 patients having more than 180 percentage of blood sugar. Out of these four (04) were known diabetic and out of these four (04), the two (02) patients were hyperglycemia and two were normoglycemia at the time of the study. We screened four (04) new cases out of 62 total cases, which is 6.45%. the all new cases had age more than forty. Our these two findings correlate with the study of Lawrence et al.

We could not find many more these types of studies in national literature and international literature. Some studies are present in international literatures but these are more than two decades old.

The Department of General Practitioner, University College Cork, Irish College of General Practitioner has emphasized to the General Practitioners in Ireland to screen undiagnosed diabetes mellitus (D.M) cases in their routine practices.[7, 8] The same type study done in Australia.[9] which strengthen the objective of our studies.

In our study in the people aged between 19 years to more than 60 years, the diabetes prevalence was 14.54 and incidence was 7.27 and in more than 40 years of age of people the prevalence of diabetes mellitus was 32% and incidence was 16% in our target population. This figures coincides with the report which noted that more than a quarter 26.9% of adults living with diabetes in Pakistan are undiagnosed.10 However, the government figures show that the prevalence of pre-diabetes was 11.43% (8.26% to 15.03%: 10 students) based on a total sample of 26.9999 people.11 An other study shows that according to the International Diabetes Federation, in 2022, 26.7% of adults in Pakistan are affected by diabetes making the total number of cases approximately 33,000,000. 12 As far as globe is concerned the studies that diabetes around the world in 2021; 537 million adults (20-79 years) are living with diabetes i.e. 1 in 10. When urban and rural difference of prevalence are seen that shows that the high prevalence of diabetes in Iran and other developing countries is chiefly attributed to urbanization.

Conclusion

So we screened 04 new diabetic cases at very low cost by opportunity and simple screening through blood sugar random testing.

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