

# Symptom and Mode of Presentation of Diabetes Mellitus Type 2 in Patients of Ajmer City

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## ABSTRACT

Diabetes mellitus type 2 is a major lifestyle disease and the most challenging public health problem of 21<sup>st</sup> century. It is the major causes of morbidity and mortality affecting the youth and middle aged people. Aim: This study aim to find out the most common symptoms and mode of presentation of diabetes accruing in the people of Ajmer on the onset of diabetes type 2. Method: A detailed questionnaire was precisely phrased for obtaining the desired information's on symptom, mode of presentation, complications and other general information. Analysis: Data were tabulated on Microsoft excel and analyzed using frequencies and percentages. Result: the mean age of diagnosis of diabetes was  $54.45 \pm 13.16$  years. Majority 23% (109) out of 464 patient's comprised male 25% (63) and female 22% (46) felt fatigue and weakness as a symptom for diabetes and polyuria, polydipsia, polydipsia were the most common presenting symptoms faced by 19% (88) of patients. In 24% of the patients diabetes was diagnosed "by chance" during their general checkup in hospital and 16% were identified incidentally at the time of surgery in body part. Conclusion: it was concluded that diagnosed as diabetes on the first time, at routine screening of patients and more common symptoms are fatigue, weakness, polydipsia, polyphagia and polyurea.

**Keywords:** Diabetes Mellitus Type 2, Symptom, Mode of presentation.

## INTRODUCTION

Diabetes mellitus type 2 is one of the most common endocrine and metabolic diseases of adult population of India. The diabetes is considered as a mild disorder of the elderly to one of the major causes of morbidity and mortality affecting the youth and middle aged people. [1] The disease is usually presented with a classic triad of symptom that is polydipsia, polyphagia and polyuria along with severe hyperglycemia. In 2000, India topped the world with the highest number of population with diabetes 31.7 million followed by China 20.8 million and United States 17.7 million. Wild et al. also predicted that by 2030 diabetes mellitus may afflict up to 79.4 million people of

India, 42.3 million in China and 30.3 million in United States. [2] Many factors affect the prevalence of diabetes throughout the country. The steady migration of people from rural to urban, change in life style from Indian tradition to modern and western. India currently faces an uncertain future, paucity of studies, investigation and the precise status of the diabetes because of its diversity in geography, socioeconomic and ethnic nature. [3]

There is an average delay of 3 to 5 years in diagnosis. Many complications are already present at the time of diabetes is diagnose. These complications are further compounded by untreated diabetes. [4]

**Aim:** In view of very little studies about symptom and mode of presentation of diabetes in Indian diabetes, this study was planned to illustrate the most common symptoms and mode of presentation of diabetes accruing in the people of Ajmer during the onset of disease diabetes mellitus type 2.

## MATERIALS AND METHODS

In the present study, 464 patients of type 2 DM which were diagnosed for first time on basis of WHO (1999), according to which FPG  $\geq 110$ mg/dl and  $\leq 126$ mg/dl are Impaired Fasting Glucose, FPG  $\geq 126$  mg/dl are diabetic and after 2hrs post load glucose PPG  $\geq 140$ mg/dl and  $\leq 200$  mg/dl are Impaired Glucose Tolerance and  $\geq 200$ mg/dl are diabetic on more than 2 occasions were selected. [5] The studied patients were have 265 male and 208 females. The data was collected from Department of Biochemistry, J.L.N Medical College, Ajmer and Saxsena Diabetes Care Center, Ajmer, in between January 2014 to December 2017. Age and sex wise distribution was done on the basis of questions that were phrased precisely for obtaining the desired information;

participants also completed a detailed questionnaire on symptom, complications and other general information. The medical reports, prescription, diagnosis and the age of onset were also confirmed while filling the questionnaire. The privacy of information was strictly maintained for avoiding legal and social allegation. The study was ethically approved by the Ethical board of J.L.N. Medical College and hospital, Ajmer.

### Statistical Analysis of data

Data were entered in Microsoft excel sheet and analyzed using SPSS version 20.1. Variables were tabulated using frequencies and percentages.

## RESULT

### Age

The mean age of onset of diabetes mellitus type 2 in the present study was  $54.45 \pm 13.16$  years. The current picture of diabetes in India is likely to worsen in the coming years. Gupta M and Ram Singh in 2015 report in their article that the numbers of people with diabetes are between 40 and 59 years of age and prevalence of obesity in adolescents may aggravate the situation. [6]

Table1: illustrate the symptoms of diabetes in T2DM in the population of Ajmer

Symptoms				
		Male (%)	Female (%)	Total (%)
Symptom	3 P's polydipsia, polyphagia, polyurea	57 (22)	31 (15)	88 (19)
	Unexplained weight loss	30 (12)	17 (8)	47 (10)
	Numbness, tinkling and burning in feet	21 (8)	34 (16)	55 (12)
	Fatigue and weakness	63 (25)	46 (22)	109 (23)
	Itching or UTI	4 (2)	9 (4)	13 (3)
	Indigestion	12 (5)	13 (6)	25 (5)
	Slow healing of wound	26 (10)	16 (8)	42 (9)
	Blurred vision	15 (6)	24 (12)	39 (8)
	Pain in legs	28 (11)	18 (9)	46 (10)
<b>Total</b>		<b>256 (100)</b>	<b>208 (100)</b>	<b>464 (100)</b>

### Symptoms

The types of symptoms are shown in table 1. The duration of these symptoms were studied between three to six months. Majority of them 109 (23%) out of 464 patient's comprises male 63 (25%) and female 46 (22%) felt fatigue and weakness as a symptom for diabetes in this study. Three basic symptoms called 3P's of diabetes type 2 namely polyuria, polydipsia,

polydipsia were the most common symptoms, faced by 88 (19%) patients. Numbness, tinkling and burning in feet, weight loss, pain in legs and slow healing of wound as a symptom for diabetes were identified by 12%, 10%, and 9% respectively. Blurred vision, indigestion and itching in genital area or UTI symptoms were faced by 8%, 5%, and 3% of patients.

**Table2: illustrate the mode of onset of diabetes in T2DM in the population of Ajmer**

Mode of Presentation of Diabetes				
Mode of Onset of Diabetes		Male (%)	Female (%)	Total (%)
	By chance	70 (27)	41 (20)	111 (24)
	Weakness	56 (22)	41 (20)	97 (21)
	During surgery	36 (14)	40 (19)	76 (16)
	Infection in urine	5 (2)	43 (21)	48 (10)
	Acute body ache and fatigue	40 (16)	13 (6)	53 (11)
	Hyperglycemia	49 (19)	30 (14)	79 (17)
<b>Total</b>	<b>256 (100)</b>	<b>208 (100)</b>	<b>464 (100)</b>	

### Mode of presentation

In 24% of the patients diabetes was diagnosed “by chance” during their general check up or due to admission to hospital with some complications. 16% of them were identified incidentally at the time of surgery in body part. The most common mode of detection among 39% patients was a combination of hyperglycemia and weakness and 21% with only weakness as symptom. Infection in urine, one of the common modes of presentation in female was reported by 21 % and in male only 2% of the patients. Another notable symptom at the onset of type 2 was acute body ache and fatigue 11%.

## DISCUSSION

### Symptom

Patients with DM Type 2 are commonly found to present late to diagnose. They were remain undiagnosed over a long period of time and are diagnosed after the onset of complications and subtle symptoms. [7] In our study maximum patients 23% have the symptom of weakness and fatigue, unexpected weight loss, pain in legs 10%. This result was consistent with the finding of Ramachandran A. [8] Hamilton et al. in 1976 reported that feeling of nausea, vomiting, abdominal pain and indigestion were notably associated as the symptom of diabetes. [9] In the present study we find after weakness as symptom most of the patients have three basic and classical symptom of diabetes that is polydipsia, polyphagia and polyuria called as 3P’s. Deepa et al. in 2014 [10] and Patel et al. in 2013 [4] also find the consistent result 43% and 44% cases had classical symptoms in

the newly detected diabetic patients of Bellary’s hospital. Blurred vision, tinkling, burning feet, slow healing of wound and itching in private parts or urinary tract infection (UTI) were also notable symptoms in Ajmer diabetic patients which correlates with the finding of Patel et al. [4] and Ramachandran A. [8]

### Mode of presentation

If symptom of diabetes are undiagnosed or neglected by the patients due to lack of knowledge and awareness over the years, then diabetes was surprisingly accidentally or ‘by chance’ detected in patient with acute hyperglycemia. Hyperglycemia is one of the modes of detection of diabetes in patients of Ajmer which supports the finding of Praveen et al. [7] concluded that in undiagnosed diabetes, acute hyperglycemia as a presenting feature in about 10% of patient and patients accidentally detected was 16%. Deepa et al. [10] also detected diabetes type 2 in 28% cases on routine investigation. In our study we also identified the patients in which diabetes diagnosed before or after surgery in body parts. Mathew AC et al. [11] found that majority of patients felt slow healing of wound as a symptom for diabetes, but feeling of thirst, frequent urination and tiredness as a symptom for diabetes were identified by only 58.6%, 73.8%, and 73.8% respectively. Some other “mode of presentation” of diabetes was infection in urine, weakness and acute body ache and fatigue that supports the finding of Ramachandran A. [8] and Patel et al. [4]

## CONCLUSION

We conclude that varieties of symptoms and “mode of presentation” are

recorded in the study. More common symptoms are fatigue, weakness and three classical symptoms polydipsia, polyphagia and polyurea. We also concluded that patients admitted for various another diseases and complications but diagnosed as diabetes mellitus on routine screening. It is found in the above study that early diagnosis with clinical presentation, examination and glycemic status helps to treat promptly and reduce complications and mortality.

#### **Limitations**

The study may be prone to potential error as the heterogeneity of the population of Ajmer with respect to ethnicity, culture and social socioeconomic condition. More research and interventions are needed for early detection and screening of diabetes on the basis of symptoms and also diminish potentially the deadly mode of presentation of diabetes.

**Conflict of interests:** No conflict of interest.

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