Original research article

Prevalence of complications in newly detected diabetic patients – a prospective study

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 ABSTRACT

Introduction: Diabetes Mellitus is a major health problem worldwide especially in India .as it is a silent killer and reduces the work capacity of individuals and causes serious complications ,resulting in economic burden to the patient and nation.

Objective of the study: To estimate the prevalence of complications in newly detected patients with Diabetes mellitus.

Men and materials: This study was conducted among patients admitted in medicine ward, ICU, IMCU and attending medicine OPD(56,334) in two Government medical college Hospitals in Coimbatore, for six months from January 2018 to June 2018.The total number of newly detected DM patients are 4612.

Results: Of the total 4,612 (Males 2629(57%), Females1983 (43%) newly diagnosed patients with T2D, majority were from the age group 41-50 years 1844(40%).599 (13%) of newly detected India T2D had neuropathy277 (6%)had retinopathy and46(1%) had nephropathy. Risk factors of macro vascular complication such as hypertension, obesity, and dyslipidemia were observed in 10(13%),1199 (26%), and 1245 (27%) of patients respectively. Ischemic heart disease was noticed in 276 (6%).

Conclusion:Screening of all above 25 years for DM is a must and will detect early and avoid complications, creating awareness from school by including education about Diet, Life Style Modification, Exercise and Diabetes in curriculum is the need of the day.

INTRODUCTION

According to the International Diabetes Federation Atlas 2015, an estimated 69.2 million Indians are diabetic, which as per the WHO assessment stood at 63 million in the year 2013. Until recently, India had more diabetics than any other country in the world, according to the International Diabetes Foundation, the country has now been surpassed in the top spot by China. Diabetes currently affects more than 7.1% of the adult population.in INDIA The average age on onset is 42.5 years. Nearly 1 million Indians die due to diabetes every year.

According to the Indian Heart Association, India is projected to be home to 109 million individuals with diabetes by 2035. A study by the American Diabetes Association reports that India will see the greatest increase in people diagnosed with diabetes by 2030. The high incidence is attributed to environmental and biological risk factors of diabetes are modified rapidly by changing level of economic developments, industrialization and urbanization, physical inactivity, unhealthy dietary habits, over weight and stress and insulin resistance .Indian

people is genetically more vulnerable for development of diabetes Risk factors for cardiovascular disease and metabolic syndrome is the common problem in our people even at very young age.

Chronic hyperglycaemia affects various organs Producing dysfunction and failure of organs. These include nephropathy leading to renal failure, neuropathy leading to foot ulcers and amputation, retinopathy leading to loss of vision. Persons with diabetes are prone to develop peripheral vascular, cardiovascular and cerebro vascular problems. But in our study many of them detected with chronic complications but not diagnosed as diabetes due to a symptomatic presentation so far, or ignorance of the patient or both . According to ICMR in 1970 the prevalence of diabetes is 1.5%in rural villages 2.3%in urban areas. The prevalence is increased to 12%-19%in urban. In rural it raised to 4%to 9%. Also there is a rapid narrowing of rural and urban prevalence of diabetes, this is again due to industrialization in rural areas. According to IDPP-1 (Indian diabetes prevention program) there is rapid shift of pre diabetes people to diabetes at a conversion rate of 18%annually.

Reasons behind high prevalence of these complications are the following

1. Majority of people not aware about the disease.

2. Delayed diagnosis-diabetic people often diagnosed when they present with one of the complications.

3. Poor control of blood sugar i.e. inadequate treatment ,lack of availability of health services, cost of drug, poor compliance.

4. Associated hypertension accelerate the development of complications, Obesity, Metabolic syndrome.

a. The poor people spent 30%of their income for health care .This cost will increase further if diabetes related complications are more prevalent .So by early diagnosis of diabetes these complications can be prevented by effective blood glucose control or the progression of complications can be delayed to give a quality life.

CLINICAL PRESENTATION OF DIABETES MELLITUS

Mostly asymptomatic, most of the patients present with osmotic symptoms like polyuria, polydipsa, polyphagia and unexplained weight loss. Other symptoms recurrent infections like urinary tract infection, skin infections, vulval pruritus in woman, and balanoposthitis in male. Diabetes also presents with complications of disease .macro vascular complications like coronary, peripheral vascular disease , micro vascular complications in the form of diabetic neuropathy, vision disturbances due retinopathy and nephropathy either overt nephropathy or micro albuminuria.

RESULTS

Total Patients Screening: 56, 334

Newly Deducted Diabetes: 4,612

MALE   - 57% (2629)

FEMALE   - 43% (1983)

AGE DISTRIBUTION NO OF PATIENTS

<   40 Y -   15% (692)

41-50 YRS   -   40% (1845)

51-60   RS   -   20% (922)

 > 60 YRS   -   25% (1153)

GENERAL   CHARECTERISTICS

MEAN

FBS	-	162
PPBS	-	287
AGE	-	53.26
HBA1C	-	07.64
BMI	-	30.05
CHOLESTEROL	-	200.9
LDL	-	119.32
TGL	-	121.8
UREA	-	28.7
CREATININE	-	1.021

HBA1C LESS THAN 6.5 -   8% (368)

6.51-7.5   -   40% (1845)

7.51-8.5   -   24% (1111)

8.51-9.5   -   13% (599)

ABOVE 9.5   -   15% (691)

PREVALENCE OF COMPLICATIONS IN TYPE 2 DM IN FIRST PRESENTATION IN OUR STUDY

DIABETIC KETOACIDOSIS	-	04% (184)
HYPOGLYCEMIA	-	02% (92)
HYPERGLYCEMIA SYMPT	-	05% (230)
HYPOKALEMIA	-	01% (46)
CORONARY DISEASE-ANGINA	-	11% (507)
ARRYTHMIAS,ECG CHANGES	-	21% (968)
CEREBRO VASCULAR DISEASES	-	04% (184)
PERIPHERAL VASCULAR DISEASE	-	06% (282)
DIABETC RETINOPATHY	-	02% (92)
DIABETIC NEPROPATY	-	02% (92)
MICRO ALBUMINURIA	-	11% (507)
DIABETIC AUTONOMIC NEUROPATHY	-	0.5% (23)
PERIPHERAL NEUROPATHY	-	23% (1060)
MARALGIA PARASTHESIA	-	11% (507)
PERI ARTHRITIS SHOULDER	-	10% (460)
HEARING PROBLEMS	-	02% (92)
BLURRRING OF VISION	-	02% (92)

NASH	-	02% (92)
ERECTILE DYSFUNCTION	-	17% (784)
PERIODENTAL DISEASE	-	18% (830)
OBSTRUCTIVE SLEEP APNOEA	-	03% (138)
OBESITY	-	22% (1014)
CANCERS	-	01%(46)
FRACTURS	-	04% (184)
DEPRESSION	-	03% (138)
COPD	-	04% (184)
INFECTIONS	-	–
SKIN FUNGAL	-	03% (138)
URINARY TRACT.INFECTIONS	-	07% (328)
NON HEALING ULCERS	-	04% (184)
PULMONARYY TUBERCULOSIS	-	04% (184)
EXTRA PULMONARY TB	-	01%(46)

OBSERVATIONS OF RESULTS:

- Large number of patients presented with complication of T2DM because of asymptomatic nature of T2DM.

- Our population develop diabetes relatively earlier than western population.

- The complications due to T2DM are more in older age group.

- Prevalence of CAD,PAD and CVD is 11%,6% and 4%.prevalence of nephropathy ,neuropathy and retinopathy is 2%,23% and 2% which is comparable with other studies in India.

- There is a significant association between initial HBA1c and the development of complications.

- Presence of dyslipidaemia increases the development of microvascular and macro vascular complications.

- Obesity is most prevalent among T2DM.

- Dyslipidaemia is frequently seen in female diabetic patients.

- There is no association between sex and the development of complications except UTI and asymptomatic UTI which are common in female.

- The prevalence of complications is more when HBA1c is more than 9.5.

- There is association between the occurrence of retinopathy and nephropathy.

- Increased CIMT indicates diffuse atherosclerosis and it is a good predictor of macro vascular complications.

CONCLUSION:

Early diagnosis of diabetes by screening of high risk population for diabetes and strict control of hyperglycemia and early and effective treatment of associated risk factors with diabetes will prevent or delay the development of complications.

- Screening of newly diagnosed T2DM patients for these complications is

mandatory at the time of diagnosis.

- Prevalence of complications is still high in our population. There is a need for early diagnosis of population at risk of diabetes by health education through Medias.
- Our screening systems are clinic or hospital based. These health care services can be utilised only by health education and motivation.
- With increasing incidence of diabetes in India, there is a need for active screening for diabetes and its complications to reduce morbidity and mortality due to diabetes, house to house survey, implementing NCD through all NGO's.

Screening of all above 25 years for DM is a must and will detect early and avoid complications, creating awareness from school by including education about Diet, Life Style Modification, Exercise and Diabetes in curriculum is the need of the day.

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