

Epidemiological Study of Management of Diabetes Mellitus Type 2 and factors affecting glycemetic control.

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Submitted: 25-02-2022

Accepted: 03-03-2022

I. INTRODUCTION

India is home of 74.5 Million Diabetes Mellitus patients.contributing second highest in the world after China.The rate at which these numbers are rising are quite surprising.it's not exceptional to cross the figure of expected 124.8 Million before 2045.The scenario changing rapidly due to improved Socio-economic conditions in rural area.increased healthcare facilities and increased health awareness.all trend is in favour of increasing prevalence of Diabetes Mellitus.

Recent Epidemiological data shows the situation is not the same throughout the country.Because of considerable disparity in awareness of disease,availability of healthcare,affordability of healthcare, the glycemetic control is far variable in Rural and Urban and Metropolitan population.Below is cross sectional study of two different population.

Aim and Objective
 To Study and compare

- 1.Glycemetic control in Rural and Metropolitan population.
- 2.Factor responsible for variation in Glycemetic control
- 3.To improve overall glycemetic variability in the rural population.
- 4.To overcome misconceptions regarding insulin therapy
- 5.To establish equality in Diabetes Management throughout the country.

Study Material

This was a population-based cross-sectional study carried out during 1 September to 30 january in the rural and metropolitan areas in part of India.

Total of 1245(582+663) patients were studied during this period of 5 months. Predesigned and pre tested questionnaires were used to elicit the information on family and individual socio demographic variables.

Population Information

Region	Rural	Metropolitan
Age distribution (years)		
30-50	29%	24%
51-80	60%	57%
Above 80	11%	19%
Gender	Male - 77% Female- 23%	Male-61% Female- 39%
Language	Marathi-80% Hindi- 37% English-3%	Marathi-74% Hindi-90% English-40%
Literacy rate	Graduate and above-5% 12th standard- 11% 10th- 18% illiterate-66%	Graduate and above-67% 12th- 25% 10th-12% illiterate-6%

Diet	Vegetarian - 74% Non vegetarian - 26%	Vegetarian- 42% Non vegetarian-58%
Occupation	Physical- 84% Sedentary - 16%	Physical- 32% Sedentary 68%
Family history of Diabetes Mellitus Type 2	Positive-23% Negative-26% Not Known-51%	Positive - 69% Negative- 21% Not known- 10%

HEALTHCARE FACILITY

Name	Primary Health Centre, Kumtha bk, handarguli, Wanjarwada, Nalgir	Bombay Hospital and Medical Research Centre ,Mumbai(Bombay)
Daily OPD/IPD (ALL)	Approx 240 (collectively)	Approx 600
Inpatient Capacity (Bed)	74 Bedded	800 bedded
Healthcare Provider qualification	B.A.M.S/B.H.M.S/M.B.B.S/MD(P.S.M)	M.B.B.S,M.D(MEDICINE),D.M(ENDOCRINOLOGY), With Diabetology Fellowships Certified Dietician
Mode of Consultation/counselling	Physical	Physical/Teleconsultation
Fee of Consultation	5-50 INR	500-4000 INR
Avg time for each patient	2-3 minutes	Minimum 10 to Maximum 30 minute.
Availability of disease specific Investigation	Blood Sugar Levels (fasting/post prandial) HbA1C Fasting lipid profile Renal Function Test	Blood Sugar Levels (fasting/post prandial) HbA1C Fasting lipid profile Renal Function Test Fundus Examination EMG+NCS
Drugs Available	1.Metformin(500mg) 2.Glimepiride 0.5,1,2 mg. 3.Insulin(NPH,Lantus,Basalog in vial form)	All classes of Oral hypoglycemic drugs with various combinations. GLP-1 analog All kind of Insulin available

STUDY

Population	Rural	Metropolitan	Result R-Rural M-Metropolitan
Disease Related Knowledge (Newly Diagnosed)			
1.Just Name	49%	14%	R>M
2.Name with Definition	29%	36%	R<M
	14%	42%	R<M
3.Name+definition+preventive measures.	08%	08%	R=M
4.name+definition+preventive measures + complications.			
Disease Related Knowledge in Known diabetic patients	17%	07%	R>M
	27%	08%	R>M
	49%	63%	R<M
1.Just Name			
2.Name with Definition	7%	22%	R<M
3.Name+def+preventive measures			
4.name+def+preventive measures +complications			
First Diagnosed when			
Presented with Typical symptoms(5Ps)	31%	63%	R<M
	69%	37%	R>M
Incidental finding			

OHA			
1.Metformin alone	76%	31%	R>M
2.Metformin with DPP4	7%	25%	R<M
3.Metformin with sulfonylurea	15%	37%	R<M
4.SGLT-2 inhibitor	3%	07%	R<M
Insulin			
1.Basal	6%	9%	R<M
2.Basal+bolus	2%	29%	R<M
3.Mix	7%	15%	R<M

Insulin awareness	Rural	Metropolitan	Result
What is Insulin	17%	69%	R<M
Injection technique	8%	28%	R<M
Storage Technique	7%	25%	R<M
Response to insulin therapy initiation			
1.convienced easily	04%	71%	R<M
2.convienced after counselling	62%	25%	R>M
3.not willing at any cost	34%	4%	R>M
Continuation of Insulin Therapy			
1.continued unless advised to stop	2%	83%	R<M
2.stopped by self after achieving good glycemic control	5%	15%	R<M
3.stopped in spite of poor glycemic control	4%	2%	R>M

Misconceptions regarding insulin			
1.once started need to continue lifelong	77%	49%	R>M
2.Insulin leads to ESRD and Dialysis	40%	12%	R>M
3.insulin is last treatment option	46%	57%	R<M
4.Insulin restricts daily activity	28%	68%	R<M
5.Insulin injection causes local site pain and mental stress	63%	40%	R>M
6.Social fear	81%	36%	R>M
7.Risks of hypoglycemia is more than OHA's	6%	29%	R<M
Average HbA1C in newly diagnosed patients	10.7%	8.2%	R>M

II. CONCLUSION

Rural populations have higher prevalence of prediabetic patient.it will face higher risk of diabetes and associated complications in coming years.Early diagnosis of high risk groups and appropriate intervention by all available measures could reduce the morbidity.

A higher level of education is associated with the better understanding of disease and administration of the advised treatment. In addition to alteration in diet and lifestyle and administration of insulin or other oral hypoglycemic agents, the management of this metabolic disease demands continuous education.

Furthermore, newly diagnosed diabetes patients in rural areas have a longer standing history of diabetes resulting higher long term complications like Diabetic Nephropathy,Diabetic retinopathy,Diabetic peripheral Neuropathy

Diabetes Education,Treatment Should be included in the National Health Programme.it could also help to prevent further complications like CVD,Obesity,Metabolic Disorders.

Diabetes could be easily managed if detected early but poor healthcare,unavailability of healthcare staff making it worse in peripheral india.

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