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Prevalence of Type 2 Diabetes Mellitus in Rural Tertiary Care South Indian Hospital

Santhosh YL^{1*}, Vasanth Kumar² and Ramanth KV¹

¹Department of Pharmacy Practice, S. A. C. College of Pharmacy, B. G. Nagara

²Department of Surgery, AH & RC, B. G. Nagara

ABSTRACT

Type 2 diabetes which affects millions of people, throughout the world is a widely prevalent chronic debilitating disease that causes short term and long term complications. India is becoming the high prevalence rate of diabetes. The present study was undertaken to know the prevalence and complications of type 2 diabetes. A prospective observational study was made. A total of 747 patients were found to be type 2 diabetes. The prevalence of type 2 diabetes was high in males 58.23% than females 41.76%. Newly diagnosed type 2 diabetes was found to be 24.25%. Only type 2 diabetes was found to be 45.24%, diabetes with cardiovascular was found by 26.23% and diabetic retinopathy was found to be 5.75%.

Key Words: Type 2 diabetes mellitus, prevalence, complications, education.

INTRODUCTION

Prevalence of diabetes worldwide in the year 2000 was 171,000,000 and predicted 366,000,000 at end of the year 2030 [1]. Total deaths from diabetes are projected to rise by more than 50% in the next 10 years. Most notably, they are projected to increase by over 80% in upper-middle income countries [2]. Type 2 diabetes is much more common than type 1 diabetes, and accounts for around 90% of all diabetes worldwide [3].

In 2005, 1.1 million people died from diabetes. The full impact is much larger, because although people may live for years with diabetes, their cause of death is often recorded as heart diseases or kidney failure [4]. 80% of diabetes deaths are now occurring in low- and middle-income

countries [5]. Diabetes is a chronic disease that occurs either when the pancreas does not produce enough insulin or when the body cannot effectively use the insulin it produces. Insulin is a hormone that regulates blood sugar. Hyperglycemia, or raised blood sugar, is a common effect of uncontrolled diabetes and over time leads to serious damage to many of the body's systems, especially the nerves and blood vessels.

Early diagnosis can be accomplished through relatively inexpensive blood testing.

Treatment of diabetes involves lowering blood glucose and the levels of other known risk factors that damage blood vessels. Interventions that are both cost saving and feasible in developing countries include:

- Moderate blood glucose control. People with type 1 diabetes require insulin; people with type 2 diabetes can be treated with oral medication, but may also require insulin;
- blood pressure control;
- Foot care.

These measures should be supported by a healthy diet, regular physical activity, maintaining a normal body weight and avoiding tobacco use. Diabetes can be prevented by thirty minutes of moderate-intensity physical activity on most days and a healthy diet can drastically reduce the risk of developing type 2 diabetes [6] Lack of awareness about diabetes, combined with insufficient access to health services, can lead to complications such as blindness, amputation and kidney failure [7]. The increasing trend of type 2 diabetes is common in the developing nations and most common in south East Asian countries [8].

Recent epidemiological studies have shown an increased prevalence of diabetes in India (11.6%), Pakistan (11.1%), Hawaii (20.4%), and Turkey (7.2%) [9-12]. According to WHO the prevalence of diabetes in INDIA and in South-east Asia region in the year 2000 and estimated 2030 is given in the table [13].

Country	2000	2030
India	31,705,000	79,441,000
South east region	46,903,000	119,541,000

Adichunchunagiri hospital and research center is a 750 bedded tertiary care teaching hospital situated in a rural area of B.G.Nagara of Nagamangala taluk. Hence the present study was carried out to know the prevalence of type 2 diabetes mellitus and complications.

The practical management of diabetes in developing countries is often made difficult by the scarcity of health care personnel, monitoring equipment and even drugs; especially in more remote areas [14]. Poor general awareness of the disease due to inadequate or even absent diabetes education undoubtedly contributes to complication of the disease [14].

MATERIALS AND METHODS

A prospective observational study of patients who visited the hospital with diabetes/newly diagnosed with symptoms of diabetes were included in the study. Based on the symptoms and blood glucose levels patients were diagnosed as diabetes mellitus by the physician. Blood glucose testing includes FBS (fasting blood sugar) and PPBS (post prandial blood sugar). Inclusion criteria was type 2 diabetes mellitus with or without complications and exclusion criteria was type 1 and gestational diabetes mellitus patients. The study was carried over a period of 2 months for 747 patients and evaluated for the age, gender and type of diabetic and complications. Prior permission was obtained from the hospital administration to carry out the study.

RESULTS

A total of 747 patients were found to be type 2 diabetes mellitus. Age group 51-60 (21.42%) dominated with type 2 diabetes followed by age 41-50(20.88%), table 1 shows the other age group distribution of diabetes.

Table 1. Age wise distribution of diabetes

Age	No. Patients	%
30-40	93	12.45
41-50	156	20.88
51-60	160	21.42
61-70	182	24.36
71-80	90	12.04
>80	66	8.83
Total	747	

Table 2. Gender wise distribution

Gender	No. Patients	%
Male	435	58.23
Female	312	41.76
Total	747	

Table 2 shows prevalence of type 2 diabetes was high in males 58.23% than females 41.76%. Newly diagnosed type 2 diabetes was found to be 24.25%.

Table 3. Diabetes mellitus with complications

	No. Patients	Percentage (%)
Only Type 2 diabetes mellitus	338	45.24
Type 2 with cardio vascular	196	26.23
Type 2 with retinopathy	43	5.75
Type 2 with foot ulcers	56	7.49
Type 2 with neuropathy	47	6.29
Type 2 with other co morbidities	67	8.96

The above table 3 shows only type 2 diabetes was found to be 45.24%, diabetes with cardiovascular was found by 26.23% and diabetic retinopathy was found to be 5.75%.

DISCUSSION

Prevalence of type 2 diabetes was found to be high in this area and it is clear from the results that number of diabetic population was high under the age group 61-70. The study clearly demonstrates that males are more prone to diabetes mellitus. There are number of risk factors that provoke diabetes such as gender, age, lifestyle modifications, diet, food habits etc. The limitation of the study is that factors that caused the diabetes were not identified. But as this is a rural set up may be due to lack of education on knowledge and management of diabetes has made the prevalence of complications.

CONCLUSION

The study demonstrates the type and complications of diabetes hence the proper management of diabetes program/ education should be made for better quality of life of diabetes mellitus patients. Hence pharmacist as a health care professional can play an important role in educating and counselling the diabetes mellitus patients regarding the disease and medications for better management.

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