Original Research Article

A study on treatment adherence among patients with type 2 diabetes mellitus attending diabetic clinic

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Received: 14 March 2017
Accepted: 03 April 2017

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ABSTRACT

Background: Diabetes is one among chronic diseases requiring long term medication and its prevalence is increasing globally. Adherence to prescribed treatment among diabetes patients is very important for good glycemic control. Poor glycemic control following poor adherence is associated with increasing risk of complications, disease progression, morbidity and mortality with increasing costs of care. Hence, the present study was undertaken to assess the adherence of diabetic patients with their prescribed medications.

Methods: The study involved 200 diabetic patients on oral anti-diabetic medication visiting out-patient diabetic clinic in a teaching hospital, Bangalore, who met required criteria. Information was collected using predesigned questionnaires by personally interviewing selected patients.

Results: A total of 122 patients (61 %) were non-adherent with medication; 36 (18%) and 42 (21%) of patients were moderately adherent and adherent to treatment respectively. Among non adherent patients, males were more (72%) compared to females (50%), which was statistically significant (P<0.05). Non adherence was more among employed (69%) patients compared to unemployed patients (54%), this was significant statistically (p >0.05). Non adherence level was very high among males with history of smoking (80%).

Conclusions: It was observed that the proportion of diabetic patients who are non-adherent to their prescribed medications was high. It is recommended that patients should be counselled repeatedly by health care providers on the importance of complying with prescribed drug regimen for better compliance and treatment outcome.

Keywords: Adherence, Diabetic, Treatment, Compliance

INTRODUCTION

Despite medication, it has been found that there are frequent episodes of inadequate glycemic control in majority of the type 2 diabetic population. Many a times, the reason is attributed to poor drug adherence.³

The vast majority of diabetic patients self-administer their own medications. Drug treatment relies heavily on the cooperation of the patient, as patients’ compliance in ambulatory care is an important link between medical process and treatment outcome.⁴
The World Health Organization (WHO) has shown that lack of adherence to medication is widespread in chronic diseases (including diabetes mellitus) and is a major cause of concern within the medical profession.5

Such reduced adherence not only results in poor health outcomes but it also has a significant impact on healthcare costs.6 Thus, the overall management of type 2 diabetes should also address adherence which may help the physician and the patient to get involved in a joint process of treatment negotiation and decision making for better treatment outcomes as well as appropriate medications.

This study, therefore, aims to study the treatment adherence among patients with type 2 diabetes mellitus on oral hypoglycaemic agents (OHA) attending diabetic clinic.

METHODS

The study was carried out for a period of 2 months (June and July 2016) in the diabetic clinic of Dr. B R Ambedkar Medical College and Hospital which is a tertiary care hospital in Bangalore. The information for this study was collected using predesigned questionnaires by personally interviewing selected patients. All the patients who attended the clinic between study periods were included in the study after considering inclusion and exclusion criteria. The demographic profile of the patients was recorded in a case report form and treatment adherence level was assessed using eight-item Morisky medication adherence scale (MMAS).7

Inclusion/exclusion criteria for the study

Inclusion criteria for the study

Inclusion criteria were patients diagnosed with type 2 diabetes mellitus, aged 30 years and above, patients taking one or more OHAs for the last six months, willing to provide informed consent

Exclusion criteria for the study

Exclusion criteria were patients on OHAs since less than six months, diabetic patients on injectable hypoglycaemic agents alone or in combination with OHAs, diabetic patients with diagnosed psychiatric problems.

RESULTS

Two hundred patients were involved in the study. From the results gotten, there were 100 (50%) male and 100 (50%) female patients and majority of them were in the age group of 51 to 65 years (100 (50%)) (Table 1). The total number of male patients that were found to be non-adherent, moderately adherent and adherent with their medications was 72, 16 and 12 respectively and among female patients it was 50, 20 and 30 respectively (Table 2) and this difference in adherence to medication between male and female patients was statistically significant (P<0.05). The results showed, though the proportion of non-adherents was more in all age group, it was high among patients aged between 31 to 50 years (Table 3) which was not statistically significant (P >0.05).

Table 1: Distribution of study subjects based on age and sex.

| Age group | Male | Female | Total |
|-----------|------|--------|-------|
| 31-50     | 26   | 30     | 56 (28%) |
| 51-65     | 46   | 54     | 100 (50%) |
| >65       | 28   | 16     | 44 (22%) |
| Total     | 100  | 100    | 200   |

Table 2: Distribution of study subjects based on adherence to medication and sex.

| Adherence Level       | Male | Female | Total |
|-----------------------|------|--------|-------|
| Adherent              | 12   | 30     | 42 (21%) |
| Moderately adherent   | 16   | 20     | 36 (18%) |
| Non-adherent          | 72   | 50     | 122 (61%) |
| Total                 | 100  | 100    | 200   |

Table 3: Distribution of study subjects based on adherence to medication and age.

| Age group | Adherent | Moderately adherent | Non-adherent | Total |
|-----------|----------|---------------------|--------------|-------|
| 31 – 50   | 12       | 8                   | 36 (64%)     | 56    |
| 51 – 65   | 20       | 20                  | 60 (60%)     | 100   |
| >65       | 10       | 8                   | 26 (59%)     | 44    |
| Total     | 42       | 36                  | 122 (61%)    | 200   |

P = 0.002
Chi-Square = 12.125

P = 0.92
Chi-Square = 0.90
A total 102 of the study patients were unemployed and 98 were employed at the time of study. Table 5 shows that majority (69%) of non-adherent patients with their medications were employed as compared to unemployed patients (52%) and this difference was statistically significant (P < 0.05). Non adherence level was very high among males with history of smoking (80%) compared to male patients with alcohol consumption (69%) and no such habits (68%). No female patient had history of smoking or alcohol consumption in our study.

DISCUSSION

The study showed that only 42(21%) and 36(18%) of patients were adherent and moderately adherent with their medication regimens respectively, while 112(61%) patients were non-adherent. This observation is similar to study by Urquhart which showed that about one-third or more of patients have poor compliance with prescribed medications irrespective of disease.8 Our study showed more number of male patients were non-compliant to their medications whereas study done by Abdulazezez et al showed marginal difference between male (48.15%) and female (51.85%) patients with respect to their medication non-adherence.5 In our study most non-adherents were in age group of 51 to 65 years and in study by Abdulazezez et al showed majority of non-adherents were in age group of 60 to 69 years.5

The results of our study showed that non-adherence was more among employed (69%) patients compared to unemployed patients (54%), this difference in adherence between unemployed and employed could be attributed to busy work schedule of working patients and no original research article has specifically focused on possible association between employment status and adherence to medication for diabetes mellitus. In our study association between socioeconomic status and treatment adherence could not be assessed because all our study subjects belonged to same socioeconomic class (Class III according to modified Kuppuswamy classification). Other studies showed that cost of drugs is obstacle to adherence with many patients irrespective of diseases.4

ACKNOWLEDGEMENTS

The authors would like to thank Principal and Head of department, department of Community Medicine, Dr B R Ambedkar Medical College Bangalore for permitting us in carrying out this study. Funding: No funding sources Conflict of interest: None declared Ethical approval: Not Required

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Cite this article as: Imran M, Plathottam JJ. A study on treatment adherence among patients with type 2 diabetes mellitus attending diabetic clinic. Int J Community Med Public Health 2017;4:1701-3.