Retrospective Study to evaluate factors associated with Glycaemic Control among Rural patients conducted at private clinic in Patna

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Abstract

Objective: The objective of this study is to highlight the challenges and success faced by a Diabetes Centre in Patna, monitored and managed, using Hb1Ac as a measure of glycaemic control.

Methods: From patients OPD records demographic cross sectional data were collected. Medical records of patients who had visited one specialised diabetic clinic at Patna were included in the study and the demographic details including Age, sex, residential postcode and glycated haemoglobin (HbA1c) levels were noted from their medical records.

Results: 524 (58.7%) patients were termed as “Metro Patients” and 368 (41.1%) were termed as “Rural Patients”. At initial baseline presentation only 230 (25.8%) patients were ay glycemic control of HbA1c≤7% in which 28% male and 25.3% female were from metro town and 24.8% male and 24.12% females were from rural town. This number was increased to 551 (62%) after proper treatment and there was more number of patients achieved glycemic control in metro town as compare to patients who were belongs to rural area.

Conclusion: Overall improvement in diabetes control was noticed among patients who attend the studied diabetes centre, however a negligible change over time were observed in female patients residing in town over time. Even within the diabetes centre, intensive intervention my needed for uncontrolled patient groups to achieve optimal diabetes control.

Keywords: Diabetes Mellitus, HbA1c, Diabetes Control, Diabetes Centre.

Introduction

Enormous human, economic and social cost worldwide is caused by the prevalence of diabetes and now this has become Global epidemic. Current estimation of 415 million people who are living with diabetes and in whom 75% live in low and middle-income countries; it has been projected that number diabetic subjects will increase 642 million by 2040[1]. Developing countries has highest burden of diabetes and mostly affected low and middle income countries where screening and treatment availability is major concern[2] and under the age of 60 years most of the people died in this countries.[3,4]. Uncontrolled diabetes led to further macro and micro vascular complication which further increase treatment cost and reduce life expectancy and quality of life[5-7]. Diabetic complications can be prevented with tight glycemic control which lead to decrease in therapy cost and increases quality of life[8-12].
In a rural areas in Bihar proper treatment of diabetes is almost an illusion. Most of the time it was non availability of proper screening and awareness regarding appropriate treatment which led to further complications and death. There were very few healthcare professional at Diabetes centres in district and remote rural areas than centres in advanced metropolitan areas. This may have an effect on the adequacy of treatment of individuals with diabetes and is an important consideration when managing people with diabetes outside of metropolitan centres.

The objective and purpose of this retrospective study is to highlight the challenges and success faced by a Diabetes Centre in Patna, managed and monitored glycaemic control by using Hb1Ac.

**Methods**

From patients OPD records demographic cross sectional demographic data including Age, sex, residential postcode and glycated haemoglobin (HbA1c) levels were collected. A pre designed questionnaire was used for the patient interview. Patients were referred to the centre from medical clinics or from general practices. In addition, postcode was used to determine proximity to diabetes centre. It was termed as “Metro Patients” and “Rural Patients” based on their respective residential post code.

The results were analysed using SPSS 10.0. Students unpaired ‘T’ test was used to compare between the two groups and Pearson correlation was used to find the correlation between the parameters of the study population. P value <0.01 was taken as the level of significance.

**Results**

A retrospective analysis was done among 892 patients who has attended the study centre. 54±6 was the mean age and enrolled female were more in n umber than the male.

524 (58.7%) patients were termed as “Metro Patients” and 368 (41.1%) were termed as “Rural Patients”. Details of mean HbA1c levels at baseline presentation and most recent visit were demonstrated in table 1.

**Table 1: Mean HbA1c levels at baseline presentation and most recent visit 770**

| Mean HbA1c (%) | N  | At baseline visit | Most recent visit | P Value |
|---------------|----|------------------|-------------------|---------|
|               | 892| 7.9±0.3%         | 7.3±0.5%          | 0.001   |

At initial baseline presentation only 230 (25.8%) patients were ay glycemic control of HbA1c≤7% in which 28% male and 25.3% female were from metro town and 24.8% male and 24.12% females were from rural town. This number was increased to 551 (62%) after proper treatment and there was more number of patients achieved glycemic control in metro town as compare to patients who were belongs to rural area. (Table 2).

**Discussion**

Similar finding were seen in earlier trial were higher number of people from rural area were having uncontrolled diabetes[13]. The main reasons of this could be low awareness, counselling and education in rural areas as compare to metro station[14-20]. Literacy levels also plays an important role in awareness and education regarding diabetes and related complications. Even in this study it was observed that in town patients were more aware regarding the complication and prevention of diabetes as compare to the rural patients. More public and government organization should take more initiative majorly in rural areas regarding
awareness and knowledge of diabetes through various public connecting activities.

Within this retrospective study of examining HbA1c as one key parameter of diabetes control, it showed that the mean glycaemic levels were above the guideline for very good control of HbA1c ≤ 7% at the initial visit to the diabetes centre with only 25.8% of patients at presentation and 62% patient at their most recent visit meeting the recommended targets for very good control. It should be noted that adequate control of diabetes (6.5-7%) may be the preferred target for many patients to avoid risks of hypoglycaemia which can occur in patients with very good control with an HbA1c ≤ 7%.

Males had significantly higher levels of HbA1c than their female counterparts at both the initial and final glycaemic tests, yet had a significant improvement in their glycaemic control levels compared to the female patient cohort. This shows that although males may present with, and continue to have, higher HbA1c levels, there is a higher level of control over time than in females.

**Conclusion**

Overall improvement in diabetes control was noticed among patients who attend the studied diabetes centre, however a negligible change over time were observed in female patients residing in town over time. Even within the diabetes centre, intensive intervention my needed for uncontrolled patient groups to achieve optimal diabetes control.

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