Short Communication

Comparison of Knowledge and Outcome Measure of HbA1c Testing in Indian NIDDM Patients of a North Indian city with that of patients from a Metropolis in South India

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Introduction:

Type 2 diabetes is a major health problem in India with rising prevalence. The patients with type 2 diabetes are at high risk of developing retinal, cardio vascular & other complications. Improved glycemic control can reduce the development and/or progression of diabetic complications. The glycosylated hemoglobin (HbA1C) test is a test of long-term glycemic control and an index of average blood glucose level during the past 2-3 months. Its normal result causes reduction in complications of diabetes. Patient's understanding of HbA1c and its target goal has a positive impact on long-term health. Many diabetics are unaware of the test or do not know their HbA1c levels and/or target goal. Diabetics who are aware of these have better health. In this study we tried to evaluate whether knowledge of this test is associated with a better glycaemic control in Dehradun and also to compare the results with those of a similar study carried out in a metropolitan city.

Materials and methods:

This is a clinic-based cross-sectional study in which all 213 NIDDM patients attending the retina service of a tertiary level eye care centre in Dehradun from July to September 2011 are included. Exclusion criteria: Any patient who did not suffer from type 2 Diabetes.

Baseline demographic and clinical data of all subjects was obtained. Subject's knowledge about HbA1c test and their target goal was assessed with a questionnaire. Recent HbA1c results were obtained from records. Retinal examination of all these subjects was conducted. Statistical analyses were performed with the SPSS version 10.0 package. Comparisons were done by Chi-square test. $P < 0.05$ was regarded as statistically significant.

Results:

The mean age of study subjects was 58 years and mean duration of diabetes was 8.7 years. 56% of the subjects were males. 68% of the subjects know about HbA1c test and 32% were unaware of it. 37% of those who know about HbA1c know their goal also. 63% are aware about HbA1c test but they do not know their goal. Mean HbA1c % was significantly lower in those who know about the test and also in those who know about their goal. Retinal condition was significantly better in those who knew about the test and also in those who knew their target goal as compared to those subjects who were not aware of either.

HbA1c Range	No. of patients aware of test	No. of patients not aware of test
7-8%	59	06
8-9%	24	06
9-10%	25	07
10-11%	22	10
11-12%	07	17
12-13%	08	22

Chi Square value= 101.5

P<0.05

Discussion:

68% subjects were aware of HbA1c test as compared to 74% in South India. 37% of those who knew about the test also knew their target goal as compared to 43% in South India[1].However, in another Indian study from CMC,

Ludhiana 94.1% diabetics did not know about hbA1c. It was noted that duration of disease is significantly associated with higher knowledge[2]. A cross-sectional study from United States examined the relationship between patient's knowledge of their recent HbA1c value and self-management of diabetes. It was reported that only 25% were able to accurately report the HbA1c values. Those with better knowledge of HbA1c were able to regulate their diabetic status more accurately[3]. Another study on type 1 diabetic patients concluded that more than 80% of the studied subjects knew their last HbA1c value and they had high perceived knowledge about HbA1c testing, whereas in our study about 33% knew their last HbA1c results[4]. Mean HbA1c levels were high in subjects who were not aware of the test compared to aware group. Subjects who were aware and knew their goal also had significantly lower HbA1c levels than aware group. No significant difference was noted in the HbA1c values among the subjects who were aware and knew their goal in comparison with the subjects who were aware, goal and last result known group. The results showed that knowledge and awareness about HbA1c test and its target goal contributed to better glycemic control. A study from Singapore showed that diabetes education changed the practice among diabetics towards better self care[5].

Conclusion:

Clinicians and diabetes educators should not only educate the patients about HbA1c test but also teach them about their target goals. Knowing about good glycemic control, their goal and last HbA1c result motivates patients to effectively manage diabetes and also reduces the development of complications.

References:

1. Manoharan D, Viswanathan V, Kumpatla S, Medempudi S. Knowledge and outcome measure of HbA1c testing in Asian Indian patients with type 2 diabetes from a tertiary care center. Indian J Community Med. 2010 [cited 2011 Oct 5]; 35:290-3.

2. Gulabani M, John M, Isaac R. Knowledge of diabetes, its treatment and complications amongst diabetic patients in a tertiary care hospital. Indian J Community Med. 2008; 33: 204-6.

3. Heisler M, Pietee JD, Spencer M, Kieffer E, Vijan S. The relation between knowledge of recent HbA1c values and diabetes care understanding and self-management. Diabetes care. 2005; 28: 816-22.

4. Skeie S, Thire G, Sandberg S. Interpretation of HbA1c values among diabetes patients: Implications for quality specifications for HbA1c. Clin Chem. 2001; 47: 1212-7

5. Tham KY, Ong JJ, Tan DK, How KY. How much do diabetic patients know about diabetes mellitus and its complications. Ann Acad Med Singapore. 2004; 33: 503-9