

Standard of diabetes care provided by physicians as per American Diabetes Association guidelines at tertiary care centers of Karachi, Pakistan

Bushra Rehman, Syeeda Fozia Qasim, Yahya Aziz, Abdul Hameed

Department of Medicine, Hamdard University Hospital Karachi, Pakistan

Objective: To assess the standard of care provided to the diabetic patients by physicians as per American Diabetes Association (ADA) guidelines at tertiary centers of Karachi, Pakistan.

Method: This cross sectional study was conducted on type 2 diabetic patients visiting two tertiary care hospitals of Karachi, over a period of six months (June to December 2012). All adults of either gender with the history of diabetes for more than 5 years were included. A structured questionnaire was used to collect data from patients. Data was analyzed with SPSS version 19.

Results: A total of 250 patients were included in this study in which, 102(40.8%) had their regular follow up while 148(59.2%) were irregular in their follow up. Regular patients maintained their blood sugar levels with mean HbA1c of 6.99 ± 0.13 , whereas irregular patients had mean HbA1c levels of 7.25 ± 0.16 . Only 162(64.6%) patients had dietary advice and 11 (6.7%) were referred to a dietitian. Eighty eight (35.2%) patients did not receive any dietary advice. BMI of 156(62.4%)

patients ranged from 27.3-30.2 and thus were categorized as obese, however weight reduction and walking was advised in only 127(88.4%) patients. Smoking cessation was advised to 122(88.4%) out of 138 smokers. Regular foot care was advised to only 72(28.8%) individuals and just 4(5.5%) were referred to chiropodist. 70(28%) patients had ocular complaints and thus had their eye examined, whilst 180(72%) never had an eye examination. For nephropathy screening, urine for proteinuria was checked in 154(61.6%) patients on their first visit and annually in 96(38.4%) patients. Lipid profile for dyslipidemia was advised in 172(68.8%) patients at their first visit and annually in 78(31.2%) patients.

Conclusion: This study concluded that the care provided to our diabetic population is inadequate and ADA guidelines are not being followed optimally. (Rawal Med J 201;41:108-111).

Keywords: Body mass Index, BMI, proteinuria, type 2 diabetes, ADA guidelines, dyslipidemia.

INTRODUCTION

Diabetes mellitus is epidemic in Pakistani population and WHO ranks Pakistan 7th on diabetes prevalence. In Pakistan, 6.9 million people are affected by diabetes and International Diabetic Federation estimates that this number will grow to 11.5 million by 2025.¹ Escalation in rate of diabetes in Pakistan is posing threat to the economy and quality of life of people due to poor glycemic control and very high rate of complications.² Standards of Care are intended to provide clinicians, patients, researchers, payers, and other interested individuals with the components of diabetes care, general treatment goals, and tools to evaluate the quality of care.³

Components of comprehensive diabetes evaluation

may include medical history (age, eating patterns, diabetes education, treatment given and response to therapy i.e. A1C records, hypoglycemic awareness, micro and macro vascular complications, psychosocial problems, dental disease), physical examination (height, weight, BMI, BP determination, fundoscopic examination, thyroid palpation, skin examination, comprehensive foot examination, palpation of dorsalis pedis, presence/absence of reflexes), laboratory evaluation (HbA1c, lipid profiles, LFTs, serum creatinine, GFR etc) and referrals (dietitian, dentist, ophthalmologist).⁴

Benefit of glycemic control in preventing long term micro and macro vascular complications is already established.⁵ Good control of diabetes

requires an interactive approach between doctor and patient. Patient education plays a vital role in this regard as if the patient does not have understanding of management objective all therapeutic plans are bound to fail,^{6,7} The aim of our study was to evaluate patient counseling about life style changes, care provided for good glycemic control and early recognition or prevention of complications, according to the ADA guidelines.

METHODOLOGY

This cross sectional study was carried out in two tertiary care hospitals, Hamdard University Hospital and Kulsoom Bai Walika social security hospital Karachi, Pakistan from June to December 2012. A total of 250 patients were included in the study after taking informed consent. Inclusion criteria included patients of either gender with type 2 diabetes for more than 5 years. Patients with type 1 diabetes mellitus, or type 2 diabetes of less than 5 years, pregnant females with gestational diabetes or those who were incapable of giving consent were excluded from the study.

In a specially developed questionnaire, patients BMI (Body Mass Index) was recorded. They were asked about their follow up visits (frequency of which were determined by their doctor). Those who were not attending clinics regularly were labeled as irregular. Dietary advice (in term of meal per day, sweets/saturated fat reduction, type of food taken) and life style modification in term of smoking cessation, walk 150min/week and weight reduction were recorded. They were also asked about their foot care in term of daily examination, avoidance of ill-fitting shoes, prompt notification of any wound or ulcer and eye care with timely referral to specialist. Their lipid profile and urine for proteinuria were also inquire as per first visit to the doctor.

RESULTS

Out of 250 patients, 64 (25.6%) males and 184 (73.6%) females. Patients' age ranged from 30-85 years (Mean 53.2 ± 20.51 years).

Baseline characteristics are given in Table 1.

Table 1. Baseline characteristics of study population.

Variable	Value
Number of Patients	250 (100%)
Male	66 (26.4%)
Female	184 (73.6%)
Regular in follow up	102(40.8%)
Irregular in follow up	148(59.2%)
Mean HbA1C	7.25
Mean BMI	28 Kg/m2
Smoker	138(55.2%)

Table 2. Care status of patients with >5 years of type 2 diabetes mellitus(n= 250).

Variable	Number (%)
Follow Up:	
HbA1c <7	102(40.8%)
HbA1c >7	148 (59.2%)
Dietary advice given	162(64.8%)
Life style modification:	
Advised Smoking cessation	122(88.4%)/138 *
Weight reduction advised	127(81.4%)/156(62.4%)*
Walking advised	127(81.4%)/156(62.4%)*
Foot care advice and examination	
Advised and referred to chiropodist	72(28.8%)
Ophthalmologic examination done	70(28%)
Lipid profile done	
First visit	172(68.8%)
Annually	78(31.2%)
Proteinuria checked:	
First visit	154(61.6%)
Annually	96(38.4%)

*n=138 smoker, *n=156 obese(BMI>27)

Out of total, 148(59.2%) patients were irregular for their follow up. Dietary advice was only given to 162 patient with very few referral to dietitians. One hundred and fifty six patients were obese but lifestyle change was advised to only 127 (88.4%%) patients. Foot care advice was only given to 72 (28.8%) patients and 4 (%) patients were referred to chiropodist (Table 2).

DISCUSSION

This study observed that ADA guidelines were not

being followed optimally even at tertiary care centers. In Pakistan, we still have no proper setup or guideline specifically designed for the need and economy of our population. We are facing an epidemic of diabetes and most of our patient have uncontrolled or poorly controlled diabetes resulting in macro and microvascular complications early in their disease course.^{8,9} In our study, most of the patients were irregular in their follow up, they only consulted their doctor on as per need base, the observation being highlighted in other local studies.^{11,12} It was also observed that those who were regular had better control of their diabetes as compared to others.

Dietary advice was given to most of our patients, but it was not individualized and was mostly given in the form of pamphlets, which were not tailored according to patient need.¹² Appropriate dietary education based on individual risk factors such as cardio metabolic status, medicinal use, degree of overweight /obesity was needed to facilitate the implementation and acceptance of dietary recommendation. Information about food with higher glycemic indices (GI) or glycemic load (GL) should be emphasized.¹¹ Since Asians with type 2 diabetes are more prone to post prandial hyperglycemia¹³ replacing or exchanging quantity of glutinous short grain rice with lower GI or GL grains would have salutary effects on overall glycemic control.¹⁴ This needs a proper nutritionist to design diet of diabetic patients on individual basis.

Life style modifications for the comprehensive management of diabetes encourage patients to maintain an active life style, because physical activity and exercise provide many health benefits and facilitate glycemic control.¹⁵ Recommendation of walking 150min/week⁷ is very modestly advised in our patients, as noted in our study. This was also noticed in a study where only 39% of the studied population knew the benefits of regular exercise.¹² Similarly, tobacco use in diabetic patients is associated with further increase of mortality and morbidity due to its effect on metabolic control as well as increase in the development of macrovascular and microvascular complication,¹⁶ but this fact was not properly addressed in our study

population. Another serious complication of diabetes is diabetic foot. Simple measure like daily inspection of feet, cautious nail cutting, avoidance of ill fitted shoes, timely referral to chiropodist or surgeon is required¹⁷ to prevent this potentially disabling complication. In our study, only 28% patients received foot care examination.

Ophthalmologist care for retinopathy is required at first on diagnosis of diabetes mellitus then annually.⁷ In our study, a very small proportion of patients had their eyes examined on first visit, a finding consistent with another local study.¹¹ Some local studies mentioned that most of our patients were referred to ophthalmologist only when they already had developed eye complications.^{18,19}

Diabetes dyslipidemia is a potent predictor of cardiovascular morbidity and mortality in diabetic patients.²⁰ To prevent this complication, lipid profile was done in most of our patients on their first diagnosis but annual surveillance was done in only 60% patients. Thus, annual surveillance need to be vigilantly advised.

Diabetic nephropathy accounts for almost a third of all causes of end stage renal disease.²¹ Annual testing to assess urine albumin excretion is required in all type 2 diabetic patients starting at diagnosis.⁷ It was found in a study that about one third of the newly diagnosed type 2 diabetics had some form of microvascular complication at the time of presentation and nephropathy being commoner than others.²² Similar result was observed in a local study where proteinuria was found in 28% patients at their first visit.⁹ In our study, although 62% patients had their albuminuria screening at first visit, subsequent annual screening was not offered to most of them.

This situation demands a proper line of action, which should be designed according to our patient understanding, social status, and accessibility. Doctors are to be updated by workshops, seminars and scientific conferences, where more emphasis should be on screening and timely referral to respective specialist.

CONCLUSION

This study found that the care provided to our diabetic population was inadequate. Optimal diabetic care requires a long term relationship with

the patient, therefore, regular follow up, proper counseling for lifestyle modification and timely screening for diabetes complication is required. Health care professional must increase awareness of diabetic care.

Author Contributions:

Conception and design: Bushra Rehman
Collection and assembly of data: Bushra Rehman
Analysis and interpretation of the data: Bushra Rehman
Drafting of the article: Syeeda Fozia Qasim
Critical revision of the article for important intellectual content: Yahya Aziz
Statistical expertise: Muslehuddin Khan
Final approval and guarantor of the article: Abdul Hameed
Corresponding author email: Mohammed Yahya Aziz: drmy.21@gmail.com
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