



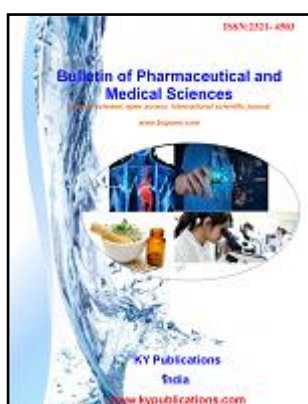
A CLINICAL AUDIT OF DIABETICS CARE IN ABU EL-ELA, HEALTH CENTER, WAD MEDANI, GEZIRA STATE, SUDAN (2011 - 2012)

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ABSTRACT

Diabetes mellitus is a serious public health problem and a major source of morbidity, mortality and economic cost to society. Objective: The aim of this audit study was to assess the quality of diabetes care provided by family medicine team in Abu Alela health center in Wad Mandeni from January 2011 to January 2012. Material and Methods: Audit study, collected from retrospective medical record in Abu Alela health center from January 2011 to January, 2012. The sample size was 50 diabetic patients, using check list. The indicators which used were those set by NICE guide line. The data was analyzed using Statistical Package for Social Sciences (SPSS). Results: The Result of the study showed 58%were women, 42% were male and the patient's ages ranged between 40 to 100 years old. The study gives good result of glycaecmic control (RBS, urine analysis) and poor result in HbA1C. The metabolic control was accepted (51%), but did not reach the target standard set (70%). The level of monitoring complications of diabetes (foot care, fundus examination) was low. There were also poor results in history of smoking habits and alcohol consumption. Conclusion: The conclusion of this study revealed deficiencies in the quality of diabetes care. The study recommended improved laboratory services by adding the necessary investigation regular ophthalmoscope eye examination, all diabetic patients should learn how to prevent foot problem before they occur and this study will be compared with second audit after six months interval using the same tool and on the same practices.

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Background and literature review

Diabetes mellitus is serious public health problem and major source of morbidity, mortality and economic cost to society. [1] All forms of diabetes increase the risk of long-term complications. These typically develop after many years (10–20), but may be the first symptom in those who have otherwise not received a diagnosis before that time. The major long-term complications relate to damage to blood vessels. Diabetes doubles the risk of cardiovascular disease.[2]

The main "macro vascular" diseases (related to atherosclerosis of larger arteries) are ischemic heart disease (angina and myocardial infarction), stroke and peripheral vascular disease. Diabetes also damages the capillaries (causes microangiopathy). Diabetic retinopathy, which affects blood vessel formation in the retina of the eye, can lead to visual symptoms, reduced vision, and potentially blindness. Diabetic nephropathy, the impact of diabetes on the kidneys, can lead to scarring changes in the kidney tissue, loss of small or

progressively larger amounts of protein in the urine, and eventually chronic kidney disease requiring dialysis. Diabetic neuropathy is the impact of diabetes on the nervous system, most commonly causing numbness, tingling and pain in the feet and also increasing the risk of skin damage due to altered sensation. Together with vascular disease in the legs, neuropathy contributes to the risk of diabetes-related foot problems (such as diabetic foot ulcers) that can be difficult to treat and occasionally require amputation.[3]The global burden of diabetes care is increasing , particularly in economically developing countries[4]. Diabetes mellitus in Sudan is associated with poor glycaemic control , a high prevalence of complications ,a low quality of life ,and particularly with morbidity[5].In catchment area of the Abu Alela health center ,the number of population is 9382 of whom 277(3%) were diabetic according the demographic data during the period by the family team.

Many audit studies have been carried out to improve the management of diabetes in primary health care, The care outcomes based on the setting are reduction of complications . The quality of care measures have been used to compare and improve diabetes care in different settings and countries[6].

Ahmed Novo and Irena jokic

They found from records of 536 patients with diabetes were analyzed (64% women and 87% patients with diabetes mellitus type 2). Family medicine teams showed poor compliance with established criteria for diabetes control. Metabolic control (69.5%) was acceptable, but the level of monitoring complications of diabetes (foot and ocular fundus examined in 53.4% of patients, respectively) was low. There were also considerable variations in diabetes management between different centers as well as between the teams in the same center.

Abdulla Shehab*, 1,3, AsimElnour 2, 4 and AbdishakurAbdullel

They found that audit on diabetic management was done in seven general practice (GP) clinics in December 2001. The results showed inadequacies in nine out of eleven criteria assessed. Remedial measures were implemented.

A second audit in March 2003. At the completion of the audit cycle, showed improvements in all the criteria first audit and 57.1% of the clinics set up a reminder mechanism compared to 0% in the first audit, in the process of care, recording of weight, height, blood pressure; feet examination, fundoscopy, blood sugar monitoring and urine for albumin improved at the end of the audit cycle. In the only outcome criteria, the blood sugar control improved from 21.8% to 31.3%.

Importance and effect of audit

1. Clinical audit is a strategy that allows for gauging the quality of care on current practice of a particular medical condition. The quality of care is assessed against a standard set of criteria recommended by clinical guidelines. It is a quality improvement process that seeks to improve patient care and outcomes through systematic review of care against explicit criteria and the review of change.
2. A clinical audit can be evaluated in the aspects of the structure of care (includes quantity and the types of services available), process of care (what is done to the patient) and outcome of care (the eventual results on an intervention or management).These indicators of care are selected and evaluated against explicit criteria. Changes are implemented when indicated and further monitoring is conducted to confirm improvement in the healthcare delivery.
3. Therefore, a clinical audit must be conducted to assess the quality of care on diabetes mellitus patients attending community-based public primary care clinics.

Rationale of the study

This study is justified and rationalized by some emerging facts about diabetes mellitus in Sudan, which as in many other countries. The high prevalence of diabetes in the Sudan is associated with poor glycaemic control, a high prevalence of complications and a low quality of life.

Objectives

General objective

To assess the quality of diabetes care provided by family medicine teams in Abu Alela health center in Wad Medani from January 2011 to January 2012 through a medical audit.

Criteria and standard:

Research methodology

Research type: Audit study.

Study design: Retrospective study.

Data source: Data were collected from electronic medical record (EMR).

The study period : From January 2011 to January 2012.

Study area: The study will be carried out in the Abu Alela health center.

Study population: Diabetic patients attending in Abu Alela health center.

Sampling: Type and size

Total coverage.

Data collection tool: Check list.

Data analysis technique: (SPSS) Statistical package and social sciences.

Results

Our analysis included the records of 50 patients with diabetes mellitus, of whom 29(58%) were female and 21(42%) were male. The patients age ranged from 40-100 years old, of whom 30 (60%) between 40-60 ,16 (32%) between 61-80 and 4 (8%) between 81-100 . Patients informed about foot care were 4(8.2%). The weight was measured 39(78%) ,height was done for 25(50%) and body mass index done for 25(50%). Nutritional advice has been clarified of 39(79.6%) patients.

Patients were asked about the clinical history, 30 (69.4%)of them about high hypertension , 4(8.2%) about dyslipidmia and 44(89.8%) were asked about current medication.

7(14%) patients asked about history of smoking and no patients asked about alcohol consumption.

Fundoscopywas done for 10(20.4%) patients. Random blood sugar(RBS) done for 44(89.8%) patients, urine for albumin ,sugar and acetone done for 37(75.5%) patients ,serum creatinine, serum electrolyte ,lipid profile done for28(57.1%) and HbA1C done for 8(16.3%) patients.

Table:1 Criteria and standard

Criteria	Target standard
-Weight	70%
-Height	70%
-Body mass index	70%
-History of hypertension	75%
-Nutritional advice	75%
-History of dyslipdemia	70%
-Smoking habits	70%
-Alcohol intake	50%
-Current medication	70%
-Foot care	70%
-fundus examination (once per year)	50%
-Random blood sugar(RBS)	80%
-Urine for sugar and acetone	80%
-urine for albuminuria	80%
-S.creatinine (e 6 months)	70%
-S.electrolytes (every 6 months)	70%
-Lipid profile (every 6 months)	70%
-HbA1C (once per year)	50%

Table:2 Demographic characteristics of 50 patients included in the clinical audit

Characteristics	Frequency	Percentage
Sex:		
Female	29	58%
Male	21	42%
Age:		
40 – 60	30	60%
61 – 80	16	32%
81 – 100	4	8%

Table 3 : Clinical characteristics of 50 patients included in the clinical audit

Characteristics	Frequency	Percentage	Target standard
Weight	39	78%	70%
Height	25	50%	70%
BMI	25	50%	70%
-History of hypertension	34	69.4%	75%
-Nutritional advice	39	78%	75%
-History of dyslipidemia	4	8.2%	70%
-History Of smoking	7	14%	70%
-History of alcohol intake	0	0%	50%
-Current medication	44	89%	70%
-Foot car	4	8.2%	70%
Fundus exam	10	20.4%	50%

Table:4 Laboratory investigations

Investigation	Frequency	Percentage	Target standard
-Random blood sugar	44	89%	80%
-urine for sugar& acetone	37	75.5%	80%
-urine for albumin	37	75.5%	80%
-S. creatinine	28	57.1%	70%
-S. electrolyte	28	57.1%	70%
-lipid profile	28	57.1%	70%
-HbA1C	8	16.7%	5%

Clinical Audit Action Plan

Project title	Clinical audit on diabetes care in patient with diabetes in Abu Alela health center Jan.2011-Jan.2012
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Action plan lead	Name: Dr/huwaida Omer	Title: Registrar of family medicine	Contact: Abu Alela health center. Tel. 0126247536
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Recommendation	Action require	Action by date	Person responsible	Comment
1-Regular ophthalmoscopic eye examination must be performed once every 6 months, because sometimes retinopathy often has no warning signs.	-To provide the center with ophthalmoscope. -Training of the doctor in the health center.	Within 6 months.	Dr/Huwaida	

2-pepole with diabetes should learn how to prevent foot problem before they occur, how to examine their feet and how to recognize the early signs and symptoms of diabetic foot problems.	Health education to the patients about foot care (lectures review, pamphlet, big booster).	1/6/2013	Dr/Huwaida	
3-Laprotory services must be improved by adding the necessary investigations.	To add the missing testes (HbA1C,RFT and lipid profile).	Within one year.	Dr/Huwaida	

Work plan

(15/2 to 1/5/2013)

Task	15/2 to 20/2/2013	1/3 to 31/3/2013				1/3 to 31/3/2013				1/5 to 16/5/13	
Proposal										
Literature Review									
Data collection										
Check list filling									
Analysis data								
Result and discussion									
Finalization the research									

Faculty of Medicine

Community and family medicine department

**A Clinical Audit of Diabetics Care in Abu El-ela, Health Center, Wad Medani, Gezira State, Sudan
(2011 - 2012)**

check list done by Dr. Huwaida Omer.

-Age.....years. -Education: literate(),illiterate().
-Sex: male(), female (). -Martial status :Single(),married()

Criteria	yes	No	Remark
1-The following discussed with diabetic patient and recorded.			
*Occupational history			
*Nutritional advice			
*History of hypertension			
*History of dyslipidemia			
*History of smoking			
*History of alcohol intake			
*Foot care			
*Current medication			
2-The following done and recorded for diabetic patient.			
*BP measurement			
*BMI measurement			
*Fundoscopy exam			

3-The following checked and recorded for this patient.			
*Random blood sugar			
*Urine for albuminuria			
*Urine for sugar & acetone			
*Serum creatinine			
*Serum electrolytes			
*Lipid profile			
*HbA1C			

Discussion

- This study disclosed the clinical and laboratory data collected from primary car medical records, found that the general practitioners either did not implement some activities or did not document.
- The study had showed the body mass index (BMI) was measured for some patients not for all and there was gap between the result and target standard due to some patients were measured their weight, but not measured their height or the doctor forget recorded.
- The study showed there was no big gap between the result and target standard of asking about history of hypertension which the important of it.
- The study also showed big variations between the result and
- The set standard of history of dyslipidmia, due to the poor documentation in clinical record as one reason for not achieving standard.
- The study showed good result of nutritional advice, which indicate of doctor awareness and patients usually asked about it.
- Alcohol and smoking are an important risk factor in chronic disease and the study give poor result, due to must of patients were female or due to lack of doctor awareness.
- The study had showed poor result of foot care because most of the patients were refused, and they think this take more time and the patients had other complaints that needed to attend.
- Fundus examination is important for assessment of fundus and early detection of the complications, the study had showed poor result because the patients were refused refer to hospital and lack of doctor skills about fundus examination.
- The study showed improved percentage of glycaemic control among patients with diabetes. The benefits of glycaemic control are reduced diabetes complications and improved quality of life.
- Serum creatinine , serum electrolytes and lipid profile in this study were acceptable, compared with others audits for example audit in England 2005 and audit in Germany.
- HbA1C is very important indicator for diabetes control. In this study the screening of HbA1C was very poor because this investigation is not available in the health center and must of patients refused hospital refer.

Conclusion and Recommendations

Conclusion

1. In this study only 8 patients (16%) were screened for HbA1C.
2. Screening for diabetic retinopathy was performed poorly (20.4%).
3. The study revealed that only 4 patients informed about the foot care.
4. Some risk factors have not performed well, screening for dyslipidmia, history of smoking and alcohol consumption.

Recommendations

1. HbA1C testing must be performed at least 2 times a year for checking the blood sugar control in patients with diabetes mellitus.

2. Regular ophthalmoscopic eye examinations must be performed once every 6 months, because sometimes diabetic retinopathy often has now warning signs.
3. People with diabetes should learn how to prevent foot problem, before they occur, how to examine their feet and how to recognize the early signs and symptoms of diabetic foot problems.
4. Laboratory services must be improved by adding the necessary investigations.
5. The study must be compared with second audit after six months interval using the same tool and the same practices.

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