

## Letters

### Management of type 2 diabetes mellitus at a rural hospital, Kwazulu-Natal, South Africa: Is the management of adult patients with type 2 diabetes mellitus optimal?

**To the Editor:** Diabetes mellitus type 2 is a common chronic disease in Montebello Hospital, a district hospital in rural Kwazulu-Natal, South Africa. The management of diabetes was perceived to be suboptimal. This was due to the high workload, lack of continuity of care and variation in clinical practice at the hospital, as well as poor patient compliance.

Over the years healthcare providers have been concerned with the improvement of quality of care for patients with diabetes.<sup>1</sup> The comprehensive management of type 2 diabetes involves identifying people with diabetes, providing education and on-going care and preventing, delaying and treating target organ damage.<sup>2,3,4</sup>

Towards the goal of optimal diabetes management, a practice redesign was effected at Montebello hospital in 2006. The aim was to improve the quality of care for adult type 2 diabetics and to measure it by means of a clinical audit.

An estimated 220 patients with type 2 diabetics attended Montebello Hospital in 2005. A retrospective sample of 100 diabetics' medical records was examined for the period 1 July 2005 until 30 June 2006. Baseline data viz. haemoglobin A1c (HbA1c) measurements, foot examinations, lipid tests,

blood pressure readings, dilated eye examinations, aspirin usage, current smokers and urine tests for microalbuminuria were noted.

Diabetic-specific improvement strategies were introduced at the hospital from 1 July 2006. A dedicated chronic care clinic was established at the outpatient department. It is run by a dedicated multidisciplinary team comprising doctors, nurses, dieticians and rehabilitation therapists. The clinical records are filed separately. A register and appointment system was started to encourage regular attendance. Health education about diabetes, foot care and nutrition was given to groups. A prospective audit of 215 diabetic patients' medical records was carried out for the period 1 July 2006 to 31 December 2006.

Retrospective results of 100 records for the period 1 July 2005 to 30 June 2006 (Table I) shows 23 (23%) patients had an acceptable systolic blood pressure (SBP) < 130 mmHg, and 43 (43%) patients had diastolic blood pressure (DBP) < 80 mmHg. The clinical records were frequently incomplete with only blood pressure recordings and random blood sugar measurements being noted.

The prospective results of 215 records for the period 1 July 2006 to 31 December 2006 (Table I) indicate that 148 patients (69%) had HbA1c levels tested. Only 15 tested patients (10%) were in the acceptable target range of HbA1c < 7%. Only half of the patients (108) had their blood pressure measured. Fasting lipid tests were done in 85 patients (40%). Total cholesterol (TC) was < 5 mmol/l in 51 (60%) of these cases.

During this prospective audit, 11% of the patients had complete foot examinations, 22% had dilated eye examinations and 11% were on aspirin prophylaxis. Forty five patients were assessed for nephropathy and 27% of these had a normal urine albumin : creatinine ratio (ACR) < 2.9; 16% of the patients had ACR 3–29 (microalbuminuria) and 58% had ACR ≥ 30 (proteinuria).

Changes to the structure and process of adult diabetes care were instituted at Montebello hospital in 2006. The retrospective audit results indicated that chronic illness care was poorly documented and probably haphazard. The prospective audit documented the suboptimal level of diabetes management. With this information, realistic performance targets can be set. There is a need to focus on improving treatment, health education and behavioural modification.

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**Table I: Retrospective results (1 July 2005 to 30 June 2006) and prospective results (1 July 2006 to 31 December 2006) of clinical audit**

	Retrospective results (n = 100)		Prospective results (n = 215)	
	Patients tested	%	Patients tested	%
<b>1. Blood pressure</b>	<b>100</b>	<b>100</b>	<b>108</b>	<b>50</b>
Average systolic blood pressure (SBP) < 130 mmHg	23 / 100	23	28 / 108	26
Average SBP ≥ 130 mmHg	77 / 100	77	80 / 108	74
Average diastolic blood pressure (DBP) < 80 mmHg	43 / 100	43	46 / 108	43
Average DBP ≥ 80 mmHg	57 / 100	57	62 / 108	57
<b>2. Haemoglobin A1c (HbA1c)</b>	<b>0</b>		<b>148</b>	<b>69</b>
HbA1c < 7%			15 / 148	10
HbA1c 7–7.9%			13 / 148	9
HbA1c 8–8.9%			20 / 148	13
HbA1c 9–9.9%			15 / 148	10
HbA1c ≥ 10%			85 / 148	57
<b>3. Lipids</b>	<b>0</b>		<b>85</b>	<b>40</b>
Triglyceride < 1.5 mmol/l			27 / 85	32
Triglyceride ≥ 1.5 mmol/l			58 / 85	68
Total Cholesterol (TC) < 5 mmol/l			51 / 85	60
TC ≥ 5 mmol/l			34 / 85	40
Low density lipoprotein- cholesterol (LDL-C) < 3mmol/l			32 / 47	68
LDL-C ≥ 3 mmol/l			15 / 47	32
High density lipoprotein -cholesterol (HDL-C) < 1.2mmol/l			23 / 51	45
HDL-C ≥ 1.2 mmol/l			28 / 51	55
<b>4. Microalbuminuria</b>	<b>0</b>		<b>45</b>	<b>21</b>
Urine albumin creatine ratio (ACR) < 2.9			12 / 45	27
ACR 3–29			7 / 45	16
ACR. ≥ 30			26 / 45	58
<b>5. Dilated eye examination</b>			<b>55</b>	<b>26</b>
<b>6. Aspirin prophylaxis</b>	<b>0</b>		<b>23</b>	<b>11</b>
<b>7. Complete foot examination</b>	<b>0</b>		<b>24</b>	<b>11</b>