A Hospital Survey of the Care of Elderly Patients with Diabetes Mellitus

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Summary

Elderly diabetic patients are at especially high risk of developing hypoglycaemia, diabetic retinopathy, foot ulcers and infection. We have surveyed 100 elderly diabetic inpatients to assess level of diabetes supervision, prevalence of risk factors for complications, and uptake of chiropody and fundoscopic services. Of all the diabetic patients, 19% received no supervision. A large proportion (71%) had two or more risk factors for the development of foot complications, yet only 50% had seen a chiropodist within the preceding 12 months. Forty-eight per cent did not undergo annual fundoscopic examination and 14 patients were regularly taking long-acting oral hypoglycaemic agents. The results highlight the particular needs of elderly diabetic patients and a strategy should be devised to optimize the care of these patients.

Introduction

Elderly patients are at particular risk of developing the complications of diabetes, with hypoglycaemia, ocular complications and foot ulcers being particular problems in this group [1–6]. Characteristics of elderly patients that compound the risk, such as living alone, poor eyesight and the presence of neuropathy are very common [7]. The elderly population should have easy access to chiropody and ophthalmic services [7–9], but the availability and uptake of these services has not been clearly described.

The purpose of this study was to examine the care of elderly patients with diabetes mellitus. We had four main aims: first to assess the general supervision of the patients' diabetes; second to document the treatments of these patients and identify inappropriate drug therapy; third to assess the level of uptake of chiropody services and correlate this with the number of risk factors for foot problems; and fourth to determine the number of patients examined by fundoscopy and the prevalence of diabetic retinopathy.

Methods

One hundred patients with diabetes mellitus who were over the age of 65 years were studied after admission to the medicine for the elderly unit of St James's University Hospital. All patients with diabetes mellitus were studied sequentially, irrespective of their treatment with diet, oral hypoglycaemic agents or insulin. Inclusion in the study was restricted to those patients with a pre-hospital diagnosis of diabetes mellitus as reported by the patient, their relatives, the general practitioner, or the hospital notes. No exclusions were made on the basis of intercurrent illness or inability to answer questions. At the time of the study, the medicine for the elderly unit in this large teaching hospital comprised nine integrated wards for patients over the age of 65 years. The patients were medically supervised by a team of six consultant physicians for the elderly.

Details of patients' age and treatment were recorded. Type of diabetes was recorded as treated with diet alone, oral hypoglycaemic agent treated, or insulin treated. In a structured interview, questions were asked about the uptake of chiropody services and the presence or absence of risk factors for foot problems. Risk factors were considered to be the presence of foot deformity (such as corns, bunions), the presence of sensory neuropathy, blindness or partial sight, living alone and the development of past or present foot ulcers. The responsibility for supervision of the patient's diabetes was recorded. The interview established whether the patient underwent annual fundoscopy by a medical practitioner, and whenever the patient had been examined by an ophthalmologist. In those patients unable to answer questions because of intercurrent illness or cognitive impairment, information was sought from the patients' relatives and/or general practitioners.

Each patient was interviewed and examined by the same observer (A.K.F.). The feet were examined for deformity (corns, callus, nail pathology, hallux valgus, hammer toe, overriding toes) and for the presence of sensory neuropathy. This was identified by standard neurological examination of both lower limbs, using pinprick, vibration and light touch modalities of sensation. Neuropathy was considered present if all three modalities were absent in one or both of the patient's feet. Fundoscopy was performed after dilatation of both pupils with 0.5% tropicamide and the presence of diabetic retinopathy documented.

Results

One hundred patients from all medicine for the elderly wards were studied over a period of 3 months; 33 patients were men and 67 women. The mean age was
82.7 years (range 66–97 years). Complete assessment was possible in 90 patients. Information about chiropody service uptake and annual fundoscopy was not available in ten patients (due to patients’ or relatives’ uncertainty or patients’ intercurrent illness). In these ten patients, however, all other aspects of the assessment were possible.

Forty patients had diabetes controlled by diet alone, 44 were controlled by oral hypoglycaemic agents and 16 were treated with insulin.

Supervision of diabetes had been undertaken by general practitioners in 41 cases; by hospital clinic in 40 cases and 19 patients received no specific supervision of their diabetes. The responsibility for the supervision of each type of diabetic patient is shown in Figure 1.

Of those patients who were treated with oral hypoglycaemic agents, 24 patients were treated with gliclazide, 13 were treated with glibenclamide, seven were treated with metformin, three were treated with chlorpropamide and one was treated with acarbose. Four patients treated with glibenclamide were treated concurrently with metformin and one patient treated with glibenclamide was treated concurrently with acarbose.

Five of those patients treated with glibenclamide or chlorpropamide were being supervised by their general practitioner, seven at a hospital clinic and one was not receiving any supervision.

Chiropody: Fifty patients had been seen by a chiropodist within the preceding 12 months and 40 had not. With ten patients it was not possible to establish whether or not they had seen a chiropodist. The uptake of chiropody services was similar in each group of diet controlled, oral hypoglycaemic treated and insulin treated diabetic patients (Figure 2).

Of all diabetic patients, 71% had more than one risk factor for the development of foot injury, ulceration or infection. The distribution of risk factor numbers is as follows; eight patients had no risk factors, 21 had one, 40 had two, 24 had three, six had four, and one patient had five risk factors.

Chiropody uptake was similar in each risk factor group; i.e. the elderly diabetic patients studied had similar chiropody service uptake when they had 0–5 risk factors for the development of foot problems (Figure 3).

Retinopathy: On fundoscopic examination 16 patients had evidence of diabetic retinopathy, and 75 had no evidence of diabetic retinopathy. Nine patients had cataracts too severe to determine with confidence if they had diabetic retinopathy.

In total, 42 patients underwent annual fundoscopy by a medical practitioner and 48 did not. It was not possible to find out this information in ten patients. An important question was whether those patients with retinopathy were those receiving annual investigation; retinopathy was present in five patients who did not receive annual fundoscopy.

Of those patients with retinopathy, 11 had been examined by an ophthalmologist but five had not. Thirteen patients had background retinopathy, two had proliferative retinopathy treated with laser photocoagulation and one patient had previously undiscovered proliferative retinopathy.

Discussion

The emphasis of care of diabetic patients is concentrated on young patients. Recent evidence has highlighted the benefit of tight glycaemic control in a predominantly young group of patients [10]. Our study shows that the care of diabetic elderly patients is less than ideal. Previous workers have stressed the importance of fundamental monitoring of diabetes and its complications [9, 11], but no one has quantified how much of this actually happens with elderly patients.

It is recommended that all diabetic patients should undergo a review at least once a year and this review should include, as a minimum, fundoscopy and foot
The problems associated with foot pathology and diabetes are well described [4, 13, 14] and there is good evidence to show that professional supervision of foot care reduces mortality and morbidity in all diabetic patients [13]. The British Diabetic Association recommends regular, systematic screening of feet and legs for detection and correction of reversible risk factors and immediate access to qualified foot care for those at high risk [9]. We suggest that older people, who have for a long time taken a less prominent position in the appropriation of these services, should receive special care and attention.

There is inadequate ophthalmic care in these patients; 48% were receiving no regular ophthalmic examination and 5% who had diabetic retinopathy did not undergo regular fundoscopy. The indications for this examination have been described [8, 9]. The British Diabetic Association has emphasized the importance of a formally structured annual retinopathy screening programme for all patients with diabetes [9]. Microvascular complications of diabetes, such as retinopathy, increase with both age and duration of the diabetes [6, 15]. It seems that currently the group of patients most at risk are not receiving the care they need.

The magnitude of this problem is too great for specialized hospital clinics and the responsibility will have to be shared with general practitioners. For this reason, general practitioners need to acknowledge the elderly person with diabetes as being particularly at risk of foot and retinal problems and to receive training and funding for the identification, early treatment and prevention of these problems. A third alternative is for a nominated physician in medicine for the elderly to have responsibility for the care of elderly diabetic patients. At the moment many diabetic patients are not receiving optimum care once discharged from hospital diabetic clinics. Indeed, 19% were not receiving any supervision whatsoever of their diabetes.

Older people are at particular risk of potentially dangerous hypoglycaemia when treated with oral agents with a long half-life (such as glibenclamide or chlorpropamide) [2, 5, 16, 17]. The drugs should be replaced by a short-acting agent such as gliclazide. In the group of patients studied, 32% were taking a long-acting oral hypoglycaemic agent, most were receiving supervision from either their general practitioner or a hospital clinic.

This study indicates that a large proportion of elderly diabetic patients are receiving less than ideal treatment and supervision. Unless the situation is remedied, more elderly patients will suffer from the unchecked effects of diabetic retinopathy, diabetic foot problems and the hypoglycaemic effects of the inappropriate drugs they are taking.

References


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