PAPERS AND ORIGINALS

Prevalence of retinopathy in a diabetic clinic

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British Medical Journal, 1978, 1, 1441-1442

Summary and conclusions

In a prospective study lasting 14 months an attempt was made to measure the visual acuity and examine the fundi, after mydriasis, of all patients attending the diabetic clinic of a district general hospital. Of 704 patients, 160 (22.7%) had some evidence of retinopathy, and 52 (7.4%) of these were already attending an ophthalmologist. A further 18 (2.6%) were known to have retinopathy and were being followed up in the diabetic clinic. Ninety (12.8%) new patients with diabetic retinopathy were discovered. Most had minimal changes, but 30 (4.3%) were considered to have changes severe enough to be referred to an ophthalmologist. Twenty-two (2.1%) underwent, or were awaiting, photocoagulation, and half of these had had no visual symptoms when first seen.

Although some of these patients were already being treated or observed for retinopathy, it is encouraging that relatively few new patients needing treatment for retinopathy were discovered. If retinopathy could be detected early enough physicians might be able to deal with it and so ease pressure on ophthalmological services.

Introduction

Diabetic retinopathy is a patchy disorder which may not affect the macula early, so that a patient may have no symptoms until the condition is moderately advanced. Many types of treatment have been tried but none has found widespread favour until recently. Photocoagulation with xenon arc or argon laser techniques is now widely accepted as capable of arresting or delaying the progress of retinopathy.¹⁻³ It is therefore increas-

ingly important to identify systematically all patients with diabetic retinopathy in a clinic population, to refer them for ophthalmic assessment when necessary, and to keep the remaining patients under close observation. I have attempted to define the size of the problem in an average diabetic clinic.

Method

Visual acuity was measured using Snellen's charts; a pinhole was used to see whether acuity could be improved in those who had forgotten their spectacles or had poor vision. The pupils were then dilated with 1% cyclopentolate or 10% phenylephrine drops, or both, and the optic fundi were examined using a conventional monocular ophthalmoscope. The findings were classified as follows, using the worse eye where there was a difference: category 0—no abnormality; 1—less than five microaneurysms in either fundi with no other abnormality; 2—background retinopathy—that is, microaneurysms, intraretinal haemorrhages, soft and hard exudates, venous irregularities—but with no disease of the macula; 3—background maculopathy—that is, the above changes impinging on macula or causing macular oedema, or both; 4—new vessels or retinal gliosis flat on peripheral retina; 5—new vessels or retinal gliosis at optic disc or growing forwards into the vitreous body; 6—advanced diabetic eye disease with secondary glaucoma or vitreous haemorrhage requiring vitrectomy.

Retinae that could not be seen due to dense cataract were put into category 0 unless there was previous documentary evidence of diabetic retinopathy, while those with dense vitreous haemorrhage were put into category 5.

Results

The study was not completed owing to the ill health of the author. Out of a total clinic population of 1087, 808 (74%) patients were sent for and 704 (65%) were examined; 104 (9.6%) failed to attend after two requests. Seventeen (1.6%) patients had died and 262 (24%) had not been sent for. The 704 patients examined were regarded as a representative sample of patients attending an average diabetic clinic, judged by age at diagnosis, sex distribution, duration of diabetes, and type of treatment.⁴⁻⁶ Forty-six per cent of patients were taking tablets, 24% were on diet alone, and 30% were taking insulin.

Over three-quarters of the patients had no fundal abnormality when first examined (category 0). There were fewer than 10% in any other category, the largest numbers being in categories 2 and 3 and the

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TABLE I—Distribution by category of 704 patients

Category: No (%) of patients:	0 544 (77.3)	1 19 (2.7)	2 59 (8.4)	3 43 (6.1)	4 7 (1.0)	5 24 (3.4)	6 8 (1.1)	Total 704
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smallest in categories 4 and 6 with only 1% each (table I). Of the 160 patients (22.7%) who were found to have retinopathy by the end of the survey, 52 were already under the care of an ophthalmologist and another 18 were being kept under observation in the clinic because of minimal retinopathy. This left 90 patients (12.8%) newly discovered during the survey. Of these, 30 were referred to an ophthalmologist and 22 required treatment. Seventeen of the 30 had symptoms but not all were treated; five patients with no symptoms required treatment (table II).

TABLE II—Patients referred to ophthalmologist

Category	No of patients	No with symptoms	No treated
2	3	1	2
3	20	12	15
4	2	0	2
5	5	4	3
Totals	30	17	22

Discussion

Now that photocoagulation for diabetic retinopathy is available, it is apparent that facilities and manpower for treatment are inadequate. There is the additional factor that photocoagulation is a surgical technique which is time-consuming and tedious. Some ophthalmologists prefer patients to be investigated with fluorescein angiography before treatment, while others are prepared to treat first and perform angiography later if results appear to be less than satisfactory. In many centres no one ophthalmologist wants to take on all the diabetics, owing to the amount of work involved.

There is already debate⁷ about what additional equipment and staff are needed for treating diabetic retinopathy. But early, simple, uncomplicated diabetic retinopathy could be dealt with at the diabetic clinic by interested and trained physicians, which would save time and impose less strain on the ophthalmological services.

As a first step, I have attempted to assess the size of the problem by examining the fundi of patients attending a diabetic clinic at a district general hospital. Patients in the first two categories obviously require no treatment, but they need to be

followed carefully to see whether retinopathy develops. Those in category 2 rarely require treatment unless there are patches of circinate exudates, which may put the macula at risk. Most patients in category 3, who have evidence of macular disease, will require treatment shortly after being seen. Category 4 is uncertain at present, in that there is no clear consensus that proliferative changes, which are flat on the peripheral retina, constitute much hazard or change rapidly. Only two patients in this group were treated. Patients in category 5 not only have proliferative changes at the disc or growing forwards, but these are often complicated by previous minor haemorrhages, which have rendered the vitreous hazy. Also there is often a degree of lens opacity, which may have to be dealt with first. Patients with advanced diabetic eye disease (category 6) are often beyond surgical aid. Several in this study had already had eyes enucleated for thrombotic glaucoma.

It is reassuring that the great majority of patients had little or no retinopathy, and that only 22 new patients requiring treatment were found among the 704 examined. It needs to be remembered, however, that more than 50 patients were already attending an ophthalmologist and as many again may be potential candidates for referral.

I acknowledge the generous help of Messrs D Perfect, M V Forbes, and M L McLeod, of the West Midlands Regional Health Authority MUMPS Computer Project at Walsall, with computer facilities, and my secretary, Mrs V Hardie, for her work in entering the data into the computer.

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(Accepted 30 March 1978)