

ORIGINAL ARTICLES—Clinical science

Profile of patients presenting for cataract surgery in the UK: national data collection

Parul Desai, Angela Reidy, Darwin C Minassian

Abstract

Aims/methods—A national data collection exercise was carried out in more than 100 hospital eye service units within the UK to provide clinical and administrative information on patients undergoing cataract surgery. This included patient clinical data such as visual acuity at the time of wait listing and at the time of admission for surgery, presence of other eye disorders, other serious medical disorders, and data on waiting time and type of admission.

Results—The profiles of the 18 454 patients aged 50 years or older are reported. Findings of particular note were as follows. At the time of wait listing for cataract surgery 31% had visual acuity of 6/12 or better, 54% had visual acuity between 6/18 and 6/60, and 15% had less than 6/60 vision. Considering those who had visual acuity of 6/12 or better at the time of wait listing, by the time of admission for surgery, the vision deteriorated to 6/18-6/60 in 33% and in a further 3% the vision deteriorated to below 6/60. In patients with moderately poor visual acuity (<6/12-6/60) at the time of wait listing, 13% had less than 6/60 vision by the time of admission for surgery.

Conclusion—This type of data collection and reporting exercise provides new material that can be used in the planning and provision of cataract surgery services in the UK.

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clinical data such as visual acuity at the time of wait listing and at the time of admission for surgery, presence of other eye disorders, other serious medical disorders, and data on waiting time and type of admission. This article aims to initiate the practice of reporting specially collected but routinely available information on cataract surgery, for use by eye service providers in policy discussions.

Methods

More than 100 unselected hospital eye units within the UK agreed to collect data on patients undergoing cataract surgery, according to a predefined set of preoperative and postoperative forms. The data collection time was from September to December of 1997. The work in each unit was carried out under the auspices of the ophthalmic clinical director. The recording of data was devolved to varying degrees to clinical audit staff.

The data collection forms were developed by a team that included ophthalmologists and epidemiologists. A handbook of instructions for data collection and recording was prepared to complement the standardised forms. This was to help ensure a standard method of data extraction and recording. The forms were tested through pilot studies.

Visual acuity refers to distance Snellen visual acuity for each eye with correction (if worn) or pinhole, at time of listing for surgery (when a decision for surgery had been made), and on admission for surgery.

A specially designed computer database application was used for entry, validation, and preparation of the data for analysis. The SPSS software was used for data analysis.

Results

Data on 19 000 patients undergoing cataract surgery were analysed. Of these, 546 who were under 50 years old and not representative of "age related" cataract were excluded from the main detailed analysis. The profile of the 18 454 patients aged 50 years or older is reported below.

AGE AND SEX STRUCTURE

Table 1 shows the age and sex distribution of the study sample. Women formed 65% (12 038/18 454) of the patients. The higher frequency of women was consistent in all age

Information available on request from the Office for National Statistics on the cataract surgery workload in the UK is limited to the number and main type of operations completed and the age and sex of the patients. This provides no information on the general health and the eye health status of those undergoing surgery for cataract. Similarly, waiting list figures at the national level are also clinically uninformative.

It could be argued that broad patient profiling is a prerequisite for fruitful dialogue between providers of eye services and their public health colleagues within the Department of Health and the district health authority. This type of profiling would include patient

Department of
Ophthalmology,
Southampton
University Hospitals
Trust

P Desai
A Reidy

Institute of
Ophthalmology,
University College
London
D C Minassian

Correspondence to:
Dr Parul Desai, Moorfields
Eye Hospital, City Road,
London EC1V 2PD.

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Table 1 Age and sex distribution of 18 454 patients on admission for cataract surgery

| Age group (years) | Number (% of total) | | |
|-------------------|---------------------|-------------|--------------|
| | Men | Women | Total |
| 50–54 | 198 (1) | 173 (1) | 371 (2) |
| 55–59 | 323 (2) | 351 (2) | 674 (4) |
| 60–64 | 503 (3) | 566 (3) | 1069 (6) |
| 65–69 | 790 (4) | 1083 (6) | 1873 (10) |
| 70–74 | 1148 (6) | 1845 (10) | 2993 (16) |
| 75–79 | 1438 (8) | 2712 (15) | 4150 (22) |
| 80–84 | 1132 (6) | 2702 (15) | 3834 (21) |
| 85+ | 884 (5) | 2606 (14) | 3490 (19) |
| Total | 6416 (35) | 12 038 (65) | 18 454 (100) |

groups except for the youngest (50–54 age group), where 53% (198/371) were men and 47% (173/371) were women. The mean age was 76.3 years (74.3 in men and 77.3 in women). Sixteen per cent of the men and 9% of the women were under 65 years old.

GENERAL MEDICAL DISORDERS

More than half (57%) of the patients wait listed for cataract surgery had a medical disorder, some having more than one; 11% had diabetes, 18% arthritis, 29% hypertension, and 5% had had stroke. As expected, the prevalence of medical disorders increased with age, except for diabetes.

SERIOUS EYE DISORDERS COEXISTING WITH CATARACT

Age related macular disease was present in 169 per 1000 patients, primary open angle glaucoma in 112 per 1000, diabetic retinopathy in 34 per 1000, and amblyopia in 14 per 1000. One or more of these disorders was present in 304 per 1000 patients. In 5 per 1000 patients, both diabetic retinopathy and age related macular disease were present. Of the self reported diabetics (2062 patients), 273 per 1000 had diabetic retinopathy. Sixty five patients who were not known as diabetic also had diabetic retinopathy.

FIRST OR SECOND EYE SURGERY

Sixty five per cent of patients were admitted for surgery to their first eye, and the remainder were for second eye cataract extractions.

VISION IN THE SURGERY EYE AT THE TIME OF WAIT LISTING

At the time of wait listing for cataract surgery, 31% (5385/17 445) had visual acuity of 6/12 or better, 54% (9390) had visual acuity between 6/18 and 6/60, and 15% (2670) had less than 6/60 vision. Complete data on visual acuity were available for 17 445/18 454 (95%) of patients.

The majority (85%) of patients with visual acuity of 6/12 or better in the eye for surgery also had this level of acuity in the fellow eye at the time of wait listing. One in five patients (20%) with visual acuity less than 6/60 in the surgery eye had the same level of acuity in their fellow eye. Thirty one per cent of all patients had visual acuity of less than 6/12 (6/18 to less than 6/60) in both eyes.

The proportion having 6/12 or better vision in the surgery eye was considerably higher in the youngest age group (50–54) compared

Table 2 Visual acuity at the time of wait listing for cataract surgery. Complete data available on 17 445 patients

| Age group (years) | Number (row %) Snellen visual acuity: | | |
|-------------------|---------------------------------------|------------|-----------|
| | 6/12 or better | <6/12–6/60 | <6/60 |
| 50–54 | 125 (36) | 147 (42) | 77 (22) |
| 55–59 | 214 (34) | 308 (49) | 108 (17) |
| 60–64 | 342 (34) | 473 (47) | 195 (19) |
| 65–69 | 607 (34) | 899 (51) | 275 (15) |
| 70–74 | 959 (34) | 1476 (52) | 413 (15) |
| 75–79 | 1333 (34) | 2105 (54) | 487 (12) |
| 80–84 | 1082 (30) | 2029 (56) | 506 (14) |
| 85+ | 723 (22) | 1953 (59) | 609 (19) |
| Total | 5385 (31) | 9390 (54) | 2670 (15) |

with that in the oldest group (36% *v* 22%). The proportion having poor vision (<6/60) was also highest in the three youngest age groups (Table 2).

Men and women had similar distribution of visual acuity: 32% of men and 31% of women had 6/12 or better vision, and 16% and 15%, respectively, had poor visual acuity of <6/60. Among patients who had 6/12 or better vision in the surgery eye at the time of listing, 85% were free of age related macular disease and of diabetic retinopathy.

Diabetics had poorer visual acuity, 20% having visual acuity of poorer than 6/60 compared with 15% in non-diabetics. The finding was consistent in all but the youngest age group where similar proportions had <6/60 vision (22% and 23% respectively).

The finding for diabetic retinopathy was similar to that for diabetics. A higher proportion of diabetic retinopathy cases had poor vision of <6/60 (19% *v* 15%).

The proportion with poor visual acuity of <6/60 in patients with age related macular disease was 19%—that is, very similar to that in diabetic retinopathy. In patients who did not have diabetic retinopathy or age related macular disease, 14% had <6/60 vision.

The risk of having poor vision (<6/60) was not related to the presence of glaucoma (15% in those with and also in those without glaucoma).

TYPE OF ADMISSION

Seventy per cent of the patients were surgical day cases. There was considerable variation between the participating centres (from 100% to less than 10% day cases). Patients aged 85 years or older were more likely to be inpatients compared with the younger age groups (40% *v* 24–34%). Also, women were more likely than men to be inpatients (32% *v* 26%), possibly because of the age structure differences. In the 844 patients with a history of stroke, 38% were inpatient admissions, compared with 30% in those without such history.

TYPE OF ANAESTHESIA

Local anaesthesia was used in 86% of the cataract operations. Older patients were more likely to have local anaesthesia (89% in the oldest group compared with 65% in the youngest).

Table 3 Visual acuity at the time of admission for cataract surgery. Complete data available on 16 032 patients

| Age group (years) | Number (row %) Snellen visual acuity: | | |
|-------------------|---------------------------------------|------------|-----------|
| | 6/12 or better | <6/12–6/60 | <6/60 |
| 50–54 | 90 (29) | 131 (42) | 93 (30) |
| 55–59 | 184 (31) | 243 (41) | 161 (27) |
| 60–64 | 267 (29) | 411 (45) | 240 (26) |
| 65–69 | 444 (27) | 796 (49) | 381 (24) |
| 70–74 | 741 (29) | 1289 (50) | 565 (22) |
| 75–79 | 1093 (30) | 1880 (52) | 656 (18) |
| 80–84 | 905 (27) | 1824 (55) | 610 (18) |
| 85+ | 605 (20) | 1705 (56) | 718 (24) |
| Total | 4329 (27) | 8279 (52) | 3424 (21) |

USE OF PHACOEMULSIFICATION AND GRADE OF SURGEON

Phacoemulsification was used in 77% of the cataract operations. There was little variation by age or by sex. There was, however, considerable variation between the participating centres, the lowest proportion having phaco being 10%, and the highest being 99%.

Most of the cataract surgery (63%) was performed by consultant ophthalmologists, 7% by associate specialists, 16% by specialist registrars (SpR), 6% by senior house officers (SHO), and the remaining 8% by other eye surgeons. Phacoemulsification was used in a high proportion of the surgery by consultant and SpR grade surgeons (80% and 83% respectively). For SHO and associate specialist grades, the proportion of phacoemulsification was 67%.

ROUTE OF REFERRAL FROM PRIMARY CARE

General practitioners were the sole source of referral in 38% of the cases. A further 50% were referred by general practitioners but the primary source was the optometrist. A small number (3%) came directly from optometrists, and the remaining 9% from other sources.

WAITING TIME FOR SURGERY

On average, patients waited for 7.4 months (SE 0.04, SD 5.2; median wait 6.4 months) from time of wait listing to surgery. The mean waiting time for first eyes was 7.4 months (SE 0.1, SD 5.2; median 6.5 months). For second eyes the average wait was 7.3 months (SE 0.08, SD 5.3; median 6.3 months).

Older patients tended to have slightly longer waiting time. Comparing the youngest and the oldest age groups, the average waiting times were 6.9 and 7.7 months. Females tended to have slightly longer waiting times, the average being 7.5 months compared with 7.2 months for males. The mean waiting time for patients with 6/12 or better vision in both eyes at the time of wait listing was 7.4 months. Those with poor visual acuity (<6/12) in both eyes at the time of wait listing had a mean waiting time of 7.5 months.

Overall, 17% of patients had waited for more than 12 months from time of wait listing for surgery. The proportion of patients waiting for more than 12 months was similar for first and second eye surgery—17% *v* 16% respectively.

VISION IN THE SURGERY EYE AT THE TIME OF ADMISSION FOR SURGERY

Considering those who had visual acuity of 6/12 or better at time of wait listing, in 33% the vision deteriorated to 6/18–6/60, and in a further 3% the vision deteriorated to below 6/60, by the time of admission for surgery. In patients with moderately poor visual acuity (less than 6/12 to 6/60) at the time of wait listing, 13% had less than 6/60 vision by the time of admission for surgery.

The distribution of visual acuity at the time of admission for surgery is shown in Table 3. Overall, the proportion of patients with visual acuity of 6/12 or better in the eye undergoing cataract surgery was 27%. This was considerably lower (20%) in the oldest age group.

Most (85%) of the patients with visual acuity of 6/12 or better in the surgery eye also had this level of acuity in their fellow eye on admission. Nineteen per cent of patients with visual acuity less than 6/60 had the same level of acuity in their fellow eye on admission for surgery. Thirty two per cent of all patients had visual acuity less than 6/12 (6/18 to less than 6/60) in both eyes.

Discussion

Many of the findings in this large national sample of cataract patients may confirm the local experience of ophthalmologists. However, having available robust national estimates from such a large data set provides useful source material to inform professional practice and for policy negotiations.

The main findings of interest from this work that could not have been otherwise ascertained include visual acuity details at the time of wait listing and at the time of admission for surgery. Other findings of interest include the national estimates for relative frequency of different surgical and anaesthetic procedures. Finally, the referral pathway to surgery and the waiting times for surgery have been analysed in more detail in relation to age and other characteristics.

Particular findings that should be considered further by clinicians in terms of acceptability at both local and national levels include the following:

- The seemingly high proportion (31%) having 6/12 or better vision at the time of wait listing, and the 15% with <6/60 vision at that time
- The reported deterioration of visual acuity from the time of wait listing, to the time of admission for surgery
- The frequency of general anaesthesia, particularly in the younger patients.

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