

A Prospective Observational Study of the Determinants of Current Cataract Surgical Selection

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INTRODUCTION

The principal aim of this research proposal was to develop quality of life and relevant visual function criteria to provide a rational decisional framework to be used as a basis for individual and policy decisions on cataract referral and surgery. There are two key objectives within this overall aim. The first is to identify reliable and effective quality of life and visual function criteria to determine the threshold for surgery for each individual patient in which false positive and false negative errors are minimized. The second is to provide a decisional framework in which risk factors may be incorporated to assess the likely outcome benefits from surgery.

AIMS

The overall aim of the proposed project was the development of criteria, which would provide a rational decision framework as a basis of practical and policy decisions on cataract referral and surgery. The three key objectives within this framework are:

1. The development of reliable and effective criteria to determine the threshold for surgery for each individual patient in which error rates outlined are minimized.
2. To provide a decisional framework in which risk factors may be incorporated to assess the likely outcome benefits from surgery.
3. To produce a measure(s) in which likely outcome benefits (particularly quality of life) from surgery may be prioritized

BACKGROUND

Cataract surgery represents the single greatest highest number of surgical procedures in ophthalmology (Desai, 1999) and its positive health impact was clearly recognized in the UK Government's "Action on Cataract" initiative introduced in 1999 that was designed to streamline the steps, process, and systems of all stages in the patient care pathway. Technical developments in surgery now mean that earlier intervention is much more effective than it was a few years ago and this has led to increased public expectations to minimize the impact of cataracts on vision related quality of life. Furthermore, the progressive ageing of the population means that there will be an increasing demand for cataract surgery for at least the next 20 years and, unless there are radical innovations to surgical procedure or intra-ocular lens design, it is also likely that referral for post-operative laser capsulotomies will increase proportionally. The clinical context to this project was to investigate factors that determine the process of care early in the cataract patient journey and how this influences surgical selection and subsequent management. Ensuring that there is equitable access to cataract services UK-wide requires some degree of standardization in surgical selection whilst preserving patient-centered care to meet the ophthalmic needs of individuals. Whilst hospital-based care may be more concerned with consequences further downstream in the cataract journey, that is, with increased numbers of patients listed for cataract outstripping surgical capacity, clearly the selection of patients presurgery is critical in the care planning process. The drive to reduce waiting times in cataract surgery has increased over the past several years following the Action on Cataract plan. This has led to initiatives for increasing cataract capacity becoming manifest in a number of public/private initiatives, for example, Netcare and Independent Treatment Centres. Concerns have been raised over "outsourcing" cataract surgical services, effectively unlinking the surgery from pre-assessment selection.

Following the "Action on Cataract" initiative, several fast-track programmes of direct referral for cataract surgery from optometrists working in the primary care sector have been established (e.g., at the Gloucestershire Eye Unit, Cheltenham General Hospital, and Princess Alexandra Eye Pavilion, Edinburgh) where listing for day-case surgery is largely based on an estimate

of potential benefits and complication risks made by the referring optometrist. While this procedure has been shown to work well at a local level where a good working relationship exists between the consultant ophthalmologists and local community optometrists, it has been difficult to implement such programmes on a national scale. This is due to a number of factors, the principal two of which are:

1. Large individual differences between ophthalmologists in what constitute criteria for cataract surgery (Mordue, Parkin, Baxter, Fewcett, & Stewart, 1994), and
2. Large individual differences in the referral criteria for cataract surgery used by optometrists (Latham & Misson, 1997).

Clearly, improvement in referral criteria can only be achieved once there are commonly accepted criteria for surgery. A consequence of these practical problems is that, in some areas of the country, there are high false positive referrals of patients with cataract and nationally there is no estimate of the false negative error rate. These issues are compounded by current practice. At present, the commonly accepted procedure for determining the false positive and false negative error rates is to assess the correctness of the referral in terms of whether an ophthalmologist will diagnose a patient as having a level of cataract that is visually disabling. Given the individual differences within ophthalmology in applying criteria for cataract surgery, and given that the appropriate validation criterion is not the diagnosis but whether the patient is likely to benefit from surgery, there is an urgent need to develop commonly agreed upon criteria used both by ophthalmologists and optometrists that will comprise reliable and effective measures and procedures for determining the threshold for cataract surgery for each individual patient.

The object of cataract surgery is to improve visual function and many reports demonstrate that the vast majority of patients benefit from surgery (Minassian, Rosen, Dart, Reidy, Desai, & Sidhu, 2001). For many years the emphasis has been on Snellen visual acuity performance both for referral and as an outcome indicator (Ruit et al., 2007). However, several studies have shown that the disabling effect of cataract is largely due to a reduced contrast in the retinal image due to intra-ocular light scatter. Not surprisingly, these studies on patients with cataract have shown that visual acu-

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