the peripheral retina and can only be seen by indirect ophthalmoscopy.[7]

If the profound visual loss associated with retinal detachment is to be significantly reduced, then further technological advances or changes in the referral pattern are unlikely to be sufficient. The awareness of the general public needs to be raised, and if it is decided that optometrists as a paramedical group should be the key personnel in detecting this condition, then they must be equipped for and be proficient at indirect ophthalmoscopy and bio-microscopy. There are some signs that this is happening already.

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ANTIMETABOLITES FOR ALL?

The use of antimetabolites to prevent scarring and failure of glaucoma filtration surgery has been one of the major advances in ophthalmology over the last two decades. The use of convenient single intraoperative sponge applications of the antimetabolites mitomycin-C (MMC)[1] or 5-fluorouracil (5FU)[2] rather than inconvenient subconjunctival injections of 5FU[3] has further accelerated the conversion of many ophthalmic surgeons to the use of these agents. However, there are still problems even with the use of single applications of antimetabolites, and these include hypotony and associated complications including choroidal haemorrhage and maculopathy, bleb leaks and an increased risk of endophthalmitis.[4,5] Furthermore, these risks may continue or even increase in the long term (particularly with MMC) because of the relatively permanent effect of this agent on the local tissue cellular population. On the other hand, certain patients may fail surgery even with higher concentrations of MMC.[1] How can the practising ophthalmologist decide which agent(s) to use on individual patients to achieve maximal pressure lowering with the least complications?

In the previous issue, Bell and co-workers reported the retrospective results and complications of a single 5 minute intraoperative application of 5FU 25 mg/ml on a mixture of low- and high-risk patients with an average follow-up time of 24 months.[6] A small proportion of patients also received up to five subconjunctival injections of 5FU (13%). The technique they used was the Moorfields intraoperative 5FU regimen,[2] which was originally designed based on experimental studies that showed prolonged fibroblast growth arrest with single exposures to 5FU.[7,8] However, these laboratory studies did show long-term fibroblast recovery following treatment with 5FU (compared with MMC), which led us to suggest at the time that intraoperative 5FU may be more appropriate for lower- rather than higher-risk patients.[8]

So what is the message from this and other studies on the role of intraoperative 5FU in the various groups at risk of surgical failure after glaucoma surgery? First let us consider the so-called high-risk patient group. Although the study by Bell *et al.*[6] appeared to show some difference between the high- and low-risk groups this was not statistically significant. However, the study had a very small chance of detecting a statistically significant difference because of the relatively small number of patients.

Our experimental studies suggest that for high-risk patients intraoperative 5FU is less likely than MMC to prevent long-term failure in these patients, probably because of fibroblast recovery after temporary growth arrest. The only prospective randomised study comparing intraoperative 5FU (50 mg/ml) with intraoperative MMC (0.5 mg/ml) was performed on a West African glaucoma population with a high risk of failure without antimetabolites.[9] This study showed MMC to be superior to 5FU in achieving pressure control, without a significant increase in short-term complications. It is still difficult to completely define high risk, but most glaucoma specialists would include neovascular glaucoma, aphakia, previous failed filtration surgery (especially if antimetabolites had previously been used) and active persistent uveitis as high risk factors. We would now use intraoperative MMC combined

with trabeculectomy or tube surgery in these groups. There may also be an 'intermediate-risk group', and the treatment regimen we use based on our clinical experience (the Moorfields/Florida or 'More Flow' regimen) utilises a lower concentration of intraoperative MMC or intraoperative 5FU combined if necessary with a few 5FU injections.[10]

But what about the so-called lower-risk patients? This question is particularly important as this group of patients accounts for the vast majority of patients undergoing filtration surgery in most centres. There are 'hidden' risk factors for failure in this group, as most patients have received topical medication before surgery and there is evidence that this may compromise the surgical result.[11,12] Therefore, achieving maximally effective but safe pressure lowering in this group is likely to have a much greater overall impact on glaucoma than in the high-risk group. However, can we really justify using intraoperative 5FU for all low-risk patients, in other words the majority of our patients undergoing filtration surgery?

First and foremost, is intraoperative 5FU safe enough? Most of the complications reported in the study by Bell *et al.*[6] can occur during normal unassisted filtration surgery, and none resulted in long-term visual loss. Other studies of intraoperative 5FU with or without injections suggest that this regimen is relatively safe.[2,9,13–16] Thin blebs resulting in leakage, hypotony and a possible increased risk of endophthalmitis are the major concerns with intraoperative 5FU. Our threshold for using intraoperative 5FU has fallen as we have reduced complications by modifying our surgery to cope with the delayed wound healing. We use techniques such as tight but releasable sutures, checking that the opening pressure of the scleral flap is not too low, special clamps to protect the cut edge of conjunctiva from antimetabolite, and sutures with vascular needles to ensure watertight conjunctival closure. Paradoxically, increasing the surface area of exposure to the antimetabolite may actually reduce the incidence of cystic blebs while increasing pressure control,[17] and we now use a much larger sponge.

However, before we can definitely recommend intraoperative 5FU for the majority of patients undergoing glaucoma surgery we need to answer many questions. Would pressure control continue to be better with no difference in complications in the long term in 5FU treated eyes compared with no treatment? More important, would a further lowering of intraocular pressure result in a better long-term visual prognosis and arrest of disease progression? Although retrospective studies are useful, only a long-term prospective randomised trial of many hundred patients has the power to answer some of these questions. The Medical Research Council/Moorfields 5FU glaucoma surgery study is now currently being carried out to try to answer these questions, but the results are not yet available. Until then, the best advice to ophthalmologists still familiarising themselves with antimetabolites is to use the minimum treatment necessary to achieve control of the healing process after glaucoma surgery, using the familiar maxim 'first do no harm'.

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THE BRITISH OPHTHALMOLOGICAL SURVEILLANCE UNIT: THE STUDY OF UNCOMMON OPHTHALMIC DISORDERS MADE EASIER

A new national resource for ophthalmic research, the British Ophthalmological Surveillance Unit (BOSU),[1] came into being in July 1997 with the support of the Iris Fund for the Prevention of Blindness and the Royal College of Ophthalmologists. At that time all senior ophthalmologists in the United Kingdom and Ireland were sent information about the aims, purposes and method of operation of the unit. Subsequently, a reporting card, listing the initial studies being facilitated by BOSU, has been sent each month to all associate specialists and consultants. In the early days of this new service it is timely to consider again why there is a need for a national system for ophthalmological surveillance and what the ophthalmological community will gain from the success of this new venture.

Medical surveillance of individual patients is intuitive to clinicians. It involves careful and systematic observation to detect early or evolving signs of disease and the institution of the appropriate interventions based on these observations. The practice of surveillance of whole populations for specific disorders may be less familiar to some ophthalmologists. This form of surveillance has been described as the 'continued watchfulness over the distribution and trends of incidence through systematic collection, consolidation and evaluation of morbidity reports and other relevant data'.[2] The 'regular dissemination of the basic data and the interpretations to all who have contributed and to all others who need to know' is an intrinsic component of the process.[2] Surveillance was initially used as a method for monitoring infectious diseases, an early example being William Farr's scrutiny of the 1848–9 cholera epidemic in England.[3]

Surveillance is no longer restricted to the study of infectious diseases. In Britain, the appropriateness and effectiveness of this method for the study of a variety of important but rare disorders is well recognised. It has already been implemented successfully, at a national level, in paediatrics[4] and neurology,[5] as well as in dermatology and orthopaedics. Population-based national surveillance effectively addresses the specific difficulties inherent in the study of uncommon diseases or events. It minimises the problem of the collection, in a reasonable time period, of the representative and sufficiently large number of cases that is necessary for unbiased and meaningful analysis in, and interpretation of, studies. In addition it is an effective means of early identification of important new or re-emerging disorders that require prompt action, either to elucidate underlying causes, to review current treatment or to develop and implement new therapies.

The British Paediatric Surveillance Unit,[4] the longest established of the speciality-specific systems in Britain, has achieved and maintained high levels of accurate reporting by paediatricians over the past decade. This may be related partly to the successful clinical paradigm of child health surveillance in which identifying and recording that a child is healthy is as important as noting any abnormalities. The equivalent in active epidemiological surveillance is that the effectiveness of the system depends as much on the confirmation by the majority of clinicians that no new cases of the disorder of interest have been seen as it does on actual notification of new cases by others. Whilst a similar example of health surveillance does not exist in ophthalmology, epidemiological surveillance is not untried. Recent examples of successful disorder-specific surveillance include that for *Toxoplasma* retinochoroiditis[6] and for congenital cataract.[7] It is an undesirable burden for reporting clinicians and an inefficient and costly exercise for researchers, to continue to be involved in establishing surveillance systems for each study. A noted benefit of the other British surveillance systems is the reduction in separate mailings to clinicians about different studies. Furthermore, since all studies facilitated by these systems undergo extensive review before being supported, reporting clinicians can be more confident about the quality of the research programme to which they are asked to contribute. BOSU, drawing on the experiences of other systems, seeks to ensure that ophthalmologists benefit in the same ways.

Ophthalmological surveillance is most appropriate for the important uncommon disorders or events that would be difficult to identify in a representative,