Rising glaucoma burden demands evidence-based strategies

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Glaucoma is a major public health issue in ophthalmology. Despite advances in diagnostics and treatment, it continues to be the leading cause of irreversible blindness worldwide[1] and second in high-income countries.[2] The silent nature of primary open-angle glaucoma with almost no symptoms in early stages leads to a significant proportion of individuals undiagnosed until significant vision loss has already occurred.

Recent epidemiological data from the European Eye Epidemiology Consortium shows that 56% of all glaucoma cases are undiagnosed, especially at younger ages, with over 80% in those below 55 years of age.[3] Based on these recent estimates, Meliante *et al* calculate the current burden of glaucoma in the UK and estimate future projections by taking into account the demographic evolution of the UK population and particularly ageing. They predict an increase of 60% by the year 2060 with then 1.6 million subjects suffering from glaucoma in the UK. This increase underlines a critical need for strategies that go beyond treatment options, focusing on evidence-based healthcare planning including structured case detection, resource allocation for disease surveillance and treatment to prevent visual impairment and blindness at older age.

A recent long-term follow-up analysis of the recruitment of the Early Manifest Glaucoma Trial in Sweden showed that a population-based screening at a mean age of 67.5 years might halve the number of subjects being blind due to glaucoma over the next 20 years (risk ratio = 0.52).[4] A previous analysis conducted in the UK found that targeted screening among high-risk populations may be cost-effective, whereas population-wide screening was not.[5] Recent artificial intelligence-based developments led to increased diagnostic accuracy in glaucoma detection, for instance using colour fundus photographs-based algorithms and shown in evaluation in population-based studies.[6] Using such technology, repetitive glaucoma screening every 5 years was modelled for the Netherlands, showing cost-effectiveness[7] and may lower visual impairment burden.

Such strategies, which may further incorporate genetic risk[8] and behaviour characteristics, will help lower the risk of visual impairment due to glaucoma, while the number of affected individuals in the UK will increase dramatically, as presented by the excellent article of Meliante *et al*.[9] It is now time to take action by scientifically developing and evaluating these strategies.

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