Treatm ent or monitoring for people with ocular hypertension?

What problem was this research addressing?

• Avoiding sight loss is a public health priority¹. In the UK, around 24,000 people are newly registered with sight loss each year (blind and partial sight), with glaucom a being the second leading cause.² Ocular hypertension (OH T) is the main and only modifiable risk factor for glaucom a.³ This prompts the question about how to best organise a monitoring programme for intraocular pressure (IOP ) and thus prevent glaucom a.

• Current practice for monitoring involves measurement of IOP and testing to detect glaucom a, namely an assessment of the optic nerve and measurement of the visual field (hereafter referred to as a glaucom a testing).

• Treatm ent, usually long term daily eye drops, is initiated as a preventative treatment based on the level of IOP and the thickness of the cornea (the front window of the eye) which are recognised risk factors for developing glaucom a.

The UK National Institute for Health and Care Excellence (NICE) recommends long-term monitoring of OH T in a specialist-led service either in secondary care (consultant-led hospital eye service) or primary care (community optometry).⁴ Thresholds for initiating treatment are related to glaucom a risk and recommended intervals for glaucom a assessment were informed by a budget impact analysis and expert opinion.⁴,⁵ However, concerns have been raised that glaucom a services are overburdened with monitoring low-risk disease.⁶

What this research adds

This study compares plausible alternative monitoring programmes for individuals with OHT (varying the types of glaucom a tests and test intervals, setting and treatment thresholds). The work reported here is part of a wider programme commissioned by the National Institute of Health Research, Health Technology Assessm ent programme to determine the optim um surveillance for people with OHT and is reported elsewhere in full.⁷

Methods

Five alternative care pathways were compared using a discrete event simulation model. The pathways were: i) treatment at OH T diagnosis, irrespective of 5-year glaucom a risk, with annual IOP assessment and no glaucom a testing; ii & iii) biennial monitoring (either in primary or secondary care setting) with treatment initiated if baseline predicted 5-year glaucom a risk is ≥6%, IOP responsiveness assessment and subsequent two yearly glaucom a testing; iv & v) Pathways aligned to NICE glaucom a guidance⁴: Treatment thresholds defined by a NICE algorithm for glaucom a risk stratification and either conservative or intensive schedules for IOP measurement and glaucom a testing. Results were presented as average costs, number of individuals with glaucom a being detected and average quality-adjusted life years (QALYs) over a 20-year period.
Policy relevance of research findings
For people with confirmed OHT, glaucoma testing more frequently than every 2 years is unlikely to be worthwhile. Treatment of OHT on diagnosis (e.g. with eye drops) and minimal monitoring (assessing treatment responsiveness in terms of IOP rather than repeat glaucoma testing) could be considered. However, further data to refine current 5-year glaucoma risk prediction models and to value patient preferences for treatment are needed.

Research Findings
- Treating OHT at diagnosis was the least costly but least effective strategy in avoiding glaucoma and glaucoma progression (pathway i).
- Intensive monitoring aligned to NICE guidance was the most costly and most effective strategy (pathway v).
- Biennial monitoring (pathway iii) was less costly than intensive monitoring and provided more QALYs than the NICE pathways, but was unlikely to be cost-effective compared with treating OHT at diagnosis with a cost per QALY of £86,717 per additional QALY gained (with the NICE threshold being around £30,000).8

Findings were robust to risk thresholds for initiating monitoring but were sensitive to treatment threshold, NHS costs and treatment adherence.

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Further details of the project: https://www.abdn.ac.uk/hsru/research/assessment/ophthalmology/optimal-surveillance-regimes/


References