

Monitoring ocular hypertension, how much and how often? A cost-effectiveness perspective

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OBJECTIVE: To assess the efficiency of alternative monitoring services for people with ocular hypertension (OHT) , a glaucoma risk factor.

DESIGN: Discrete event simulation model comparing five alternative care pathways: treatment at OHT diagnosis with minimal monitoring; biennial monitoring (primary and secondary care) with treatment if baseline predicted 5-year glaucoma risk is $\geq 6\%$; monitoring and treatment aligned to National Institute for Health and Care Excellence (NICE) glaucoma guidance (conservative and intensive) .

SETTING: UK health services perspective.

PARTICIPANTS: Simulated cohort of 10,000 adults with OHT (mean intraocular pressure (IOP) 24.9 mmHg (SD 2.4) .

MAIN OUTCOME MEASURES: Costs, glaucoma detected, quality-adjusted life years (QALYs) .

RESULTS: Treating at diagnosis was the least costly and least effective in avoiding glaucoma and progression. Intensive monitoring following NICE guidance was the most costly and effective. However, considering a wider cost-utility perspective, biennial monitoring was less costly and provided more QALYs than NICE pathways, but was unlikely to be cost-effective compared with treating at diagnosis (£86,717 per additional QALY gained) . The findings were robust to risk thresholds for initiating monitoring but were sensitive to treatment threshold, National Health Service costs and treatment adherence.

CONCLUSIONS: For confirmed OHT, glaucoma monitoring more frequently than every 2 years is unlikely to be efficient. Primary treatment and minimal monitoring (assessing treatment responsiveness (IOP)) could be considered; however, further data to refine glaucoma risk prediction models and value patient preferences for treatment are needed. Consideration to innovative and affordable service redesign focused on treatment responsiveness rather than more glaucoma testing is recommended.

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