WHEN IS IT COST-EFFECTIVE TO TREAT OCULAR HYPERTENSION? RESULTS OF A DECISION-ANALYTIC HEALTH ECONOMIC MODEL
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OBJECTIVE: To assess the cost-effectiveness of treating ocular hypertension (OHT) in the United States. METHODS: Cost-effectiveness was estimated using a Markov model. Health states were stable and progressed OHT. Data from the Ocular Hypertension Treatment Study (OHTS) were used to derive practice patterns and transition probabilities. Data were obtained from Blue Cross/Blue Shield for specific unit costs for medications, patient visits, diagnostics, and therapeutic procedures. A payer perspective was adopted, the time horizon was 5 years, and costs were discounted at 3% per year. RESULTS: Across all OHT patients, the incremental cost-effectiveness ratio (ICER) was €89,072 to prevent 1 case from progressing to primary open-angle glaucoma. After adjusting for risk factors for progression identified in multivariate analysis in the OHTS trial, minimally cost-effective ICERs were: 20 years above the mean age of 56 years, ICER = €45,155; 4 mmHg above the mean intraocular pressure of 22 mmHg, ICER = €46,748; 40 microns less than the mean central corneal thickness of 573 microns, ICER = €36,683; and 0.2 wider than the mean vertical cup/disc ratio of 0.4, ICER = €35,633. CONCLUSIONS: This Markov model was based on the results and practice patterns of the OHTS trial, and the results suggest that treating all OHT patients may not be cost effective. However, treating OHT patients with risk factors for progression, i.e., advancing age, higher intraocular pressures, thinner central corneal thicknesses, and wider vertical cup/disc ratios, does appear to be cost-effective in preventing the onset of glaucomatous damage.

ASSESSMENT OF THE COST-EFFECTIVENESS OF TRAVOPROST VERSUS LATANOPROST, AS SINGLE AGENTS FOR GLAUCOMA TREATMENT IN FRANCE
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OBJECTIVES: To assess the cost-effectiveness of travoprost versus latanoprost as single agents to treat glaucoma in France. METHODS: A Markov model reproduced the course, over 5 years, of patients beginning a prostaglandin as monotherapy (PM). The effectiveness criterion was ‘mean time to treatment change’ (MTTC), fitted with a Weibull distribution from a national survey. Possible switches were association (A), treat-change’ (MTTC), fitted with a Weibull distribution from a national survey. Additional costs for Travatan were €140, €45, and €123 per year, respectively. CONCLUSION: Travoprost yielded a longer effectiveness profile and minimized early treatment regimen changes. The smaller portion of patients needing a new treatment, laser treatment or surgery virtually compensated for the higher travoprost acquisition cost. Travoprost is a more cost-effective alternative, especially in patients whose IOP at treatment onset lay between 21 and 23 mmHg.

MODELING THE COST AND CONSEQUENCES OF RESTORE®, A MULTIFOCAL INTRAOCULAR LENS (IOL) IN REFRACTIVE SURGERY IN FRANCE
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OBJECTIVE: To model the lifetime costs and consequences of wearing spectacles versus implantation of ReSTOR® (a multifocal IOL), or other multifocal IOLs (MFIOLs), in the treatment of presbyopia. METHODS: A Markov model followed subjects from age 45 (presbyopia onset) to death. The prevalence rates of patients without spectacles after ReSTOR® surgery and other MFIOLs were taken from clinical trials. The number of cataract operations avoided by presbyopia surgery (PS) and mortality prevalence rates were estimated from national statistics.
MODELING THE COSTS AND CONSEQUENCES OF RESTOR®, A MULTIFOCAL INTRAOCULAR LENS (IOL), AFTER CATARACT SURGERY IN FRANCE

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OBJECTIVE: To compare the lifetime costs and consequences of liberating patients from spectacles, after cataract surgery, by implanting the multifocal IOL “ReSTOR®” versus monofocal IOLs. METHODS: A Markov model was created to follow patient cohorts from cataract surgery until death. Prevalence rates of patients not needing spectacles after cataract surgery were obtained from a clinical trial. Resource utilization included implant surgery, IOLs, spectacles, visits to ophthalmologists and eye centers, transportation, and time lost by patients. Economic perspectives were those of Society and Sick Funds (SF). Mortality rates were introduced into the model. Discount rates were applied. Sensitivity analyses were performed. Patients were followed from age 70 to 100 years. RESULTS: More than 80% of patients implanted with ReSTOR® were spectacle-free compared to about 10% with monofocal IOLs. The mean number of spectacles purchased was 1.7 after ReSTOR® and 7.6 after monofocal IOLs. Surgical costs were €3292 for ReSTOR® and €2292 for monofocal IOLs. From the societal perspective, total undiscounted costs were €4384 with ReSTOR® compared to €5359 with monofocal IOLs. With a 3% discount rate these costs became €4226 and €4654, respectively. From the SF perspective, total undiscounted cost estimates were €2350 with ReSTOR® and €2553 with monofocal IOLs. With a 3% discount these costs became €2334 and €2481, respectively. Costs and intervals between spectacle replacements were the most sensitive parameters. CONCLUSION: From both the societal and SF perspectives, undiscounted savings achieved by liberating patients from spectacles counterbalanced the initially higher cost of ReSTOR®. For Society, the discounted incremental cost of avoiding spectacles after ReSTOR® implants was less than €13/year, and SF saved money. ReSTOR® improves patients’ lifestyle and is a cost-effective alternative versus spectacles in presbyopic patients.

LAST STAGE GLAUCOMA IN EUROPE: COSTS AND QUALITY OF LIFE OF PATIENTS FROM 4 COUNTRIES

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BACKGROUND: European studies have identified primary open angle glaucoma (POAG) as the second leading cause of blindness, accounting for 8–10% of blindness in older people. The objective of this study was to estimate the societal costs and the quality of life among patients with late stage POAG.

METHODS: Charts of late stage POAG patients in France, Germany, the UK and Denmark were reviewed and the patients were interviewed. Costs and utility values of health related quality of life were estimated (based on resource use multiplied with unit costs and on EQ-5D questionnaire). RESULTS: 162 patients were included. Average level of visual acuity was 0.28 and 0.11 of the best and worst eye, respectively. Annual health maintenance costs of late stage glaucoma patients are €830 (SD: €445). This does not include costs of surgery and larger procedures. Purchase costs of devices amount to €2045 per patient. Most importantly, however, are costs of home care, which average €2,703 per year. With respect to the health related quality of life the average score is 0.67 and best predictor of QoL is visual acuity. From both the societal and payer perspective, and costs were discounted at 3% per year.

BIMATOPROST, LATTANOPROST, AND TRAVOPROST FOR THE TREATMENT OF GLAUCOMA: A COST-EFFECTIVENESS ANALYSIS IN SCANDINAVIA USING A DECISION-ANALYTIC HEALTH ECONOMIC MODEL

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OBJECTIVE: To assess the cost-effectiveness of bimatoprost, latanoprost, and travoprost monotherapy in patients with open-angle glaucoma in Denmark, Norway, and Sweden (Scandinavia). METHODS: Cost-effectiveness analysis was performed using a Markov decision-analytic health economic model with stable and progressed glaucoma as the health states. Transition probabilities for primary open-angle and exfoliation glaucoma were derived from published medical literature, and information regarding clinical practice patterns was obtained from surveys completed by 45 ophthalmologists dispersed throughout each of the countries. Country-specific unit costs were used for medications, clinic visits, diagnostics, and outpatient services. Quality of life weights for various levels of visual acuity ranged from 0.50 to 0.68, and the effectiveness metric was the quality-adjusted life year (QALYs). A 5-year time horizon was adopted, analyses were from a payer perspective, and costs were discounted at 3% per year.

RESULTS: Effectiveness (years till progression) was within a narrow range (3.2048 to 3.2613 QALYs) across all products.