PEY3

REFILL COSTS AND BUDGET IMPACT OF GLAUCOMA LIPID THERAPY: A RETROSPECTIVE DATABASE ANALYSIS

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OBJECTIVE: This study examines mean days between patients refilling their glaucoma prescriptions for latanoprost, travoprost, and bimatoprost. METHODS: Patients with an initial NDC pharmacy claim for the 2.5mL bottle of latanoprost, travoprost, or bimatoprost between September, 2002 and December, 2002 were identified from a retail pharmacy database. Continuous eligibility was defined by at least one claim for the same lipid agent and bottle size one year later between October, 2003 and December, 2003. The mean number of days between claims, mean number of refills, the average cost per patient per year and the annual refill cost differences between cohorts were calculated. Due to limitations inherent in claims data analyses, efficacy data were not part of the analysis. RESULTS: The mean number of days between refills for latanoprost was 47, for travoprost 53, and for bimatoprost 52. The among-group difference was statistically significant (p < 0.0001). The mean number of refills per year was calculated to be 7.8, 6.9, and 7.0 for latanoprost, travoprost, and bimatoprost, respectively. Based on the mean number of refills, the average cost per patient per year was $429.11 for travoprost, $434.70 for bimatoprost, and $455.36 for latanoprost. The incremental refill cost savings per year for the latanoprost population (n = 79,820) would be approximately $2 million by using bimatoprost or travoprost instead of latanoprost. CONCLUSIONS: Both bimatoprost and travoprost have higher average days between refills, suggesting these two products may last longer than latanoprost. Consequently, an additional refill cost savings is realized by using bimatoprost or travoprost over latanoprost.

PEY4

A COST-BENEFIT ANALYSIS OF AN APODIZED DIFFRACTIVE MULTIFOCAL INTRA-OCULAR LENS BASED ON WILLINGNESS-TO-PAY IN CATARACT PATIENTS

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OBJECTIVES: It is estimated that 1.2 million cataract surgeries are performed annually in the United States. Cataract patients bilaterally implanted with monofocal intra-ocular lenses (M-IOLs) often remain partially dependent on spectacles. Bilateral implantation of apodized diffractive multifocal IOLs (ADM-IOLs) substantially reduce postoperative spectacle dependence. The objective of this study was to determine the value of the ADM-IOL relative to the M-IOL based on patient willingness-to-pay (WTP) for spectacle independence. METHODS: The economic benefit of spectacle independence was valued using a WTP approach. The Cataract TyPE Specification was used to collect WTP for spectacle independence in a large clinical trial comparing ADM-IOLs to M-IOLs. A cost-benefit analysis (CBA) was used to determine the net benefit of spectacle independence for ADM-IOL and M-IOL patients. Net benefit was defined as patient WTP for spectacle independence, weighted by the probability of achieving spectacle independence, minus the incremental cost of treatment. Cost information was taken from standard reference sources and presented from a societal perspective. The incremental cost of the ADM-IOLs was set at $1200. Costs and benefits were discounted at 3%. The time-frame of the study was 14 years based on patient life expectancy. RESULTS: The clinical trial established that ADM-IOL patients had an 80% probability of achieving spectacle independence compared to only 8% for M-IOL patients. The vast majority of the trial subjects (80%) indicated a daily WTP of ≥$5.00 for spectacle independence. Based on these results, the ADM-IOL net benefit was estimated at $13,802 compared to a net benefit of $1,371 for the M-IOL. CONCLUSIONS: This study indicated that cataract patients place a high value on spectacle independence. Consequently, the net benefit of the ADM-IOL was 11.5 times greater than its incremental cost and nine times greater than the benefit provided by the M-IOL.

PEY5

THE COST-EFFECTIVENESS OF DIFFERENT CASE-FINDING STRATEGIES FOR DETECTION AND TREATMENT OF OCULAR HYPERTENSION AND PRIMARY OPEN-ANGLE GLAUCOMA BY THE OPHTHALMOLOGIST

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OBJECTIVES: Glaucoma is the second leading cause of bilateral blindness worldwide. Early detection and treatment can prevent the occurrence of blindness. The objective of this study is to determine the most cost-effective case-finding strategy to detect and treat ocular hypertension (OH) and primary open-angle glaucoma (POAG) by the ophthalmologist to prevent blindness. METHODS: An elevated intraocular pressure (IOP) defines OH and is a major risk factor for POAG. IOP is assessed by tonometry. Three case-finding strategies, which differ with respect to the group of patients receiving tonometry, are analyzed and compared using a Markov cost-effectiveness model. All patients undergo ophthalmoscopy to detect a glaucomatous optic nerve, but tonometry is routinely performed to: 1) all newly visiting patients; 2) high-risk patients only; or 3) no one. The population characteristics are based on the literature and on data gathered from the charts of 1000 new patients visiting an ophthalmic practice. Transition probabilities are taken from the literature. The (direct) costs of diagnosis and treatment represent those for The Netherlands. The time-horizon of the model is 20 years. An annual discount rate of 4% is used. RESULTS: Strategy three is cheapest but also yields most blindness. For strategy one, the computed extra costs to prevent one person from blindness amount to 7800€. For strategy two this is 19,500€. The marginal C/E ratio for strategy one is 1670€ per year of vision saved; for strategy two this is 4259€. These outcomes disregard extra costs due to blindness, estimated to exceed at least 5000€ per year of blindness. Strategy one is computed to become cost saving when such costs exceed 17000€. Extensive sensitivity analyses show that these results are robust. CONCLUSION: It is cost-effective to routinely perform tonometry to all new ophthalmic patients to prevent blindness due to glaucoma.