Abstracts

PEY12

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 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. Discount rates and sensitivity analyses were performed. Two perspectives were considered: Sick Fund (SF) and Societal. RESULTS: spectacle-free rates were >80% for ReSTOR® and 40% for MFIOLs. Mean lifetime numbers of spectacles purchased were 4.2 with ReSTOR®, 12.7 with MFIOLs, and 21.3 without PS. Early PS avoided 0.80 late cataract surgeries per subject. Surgical procedure costs were €3292 for ReSTOR® and €2292 for other MFIOLs, respectively. From the societal perspective, total undiscounted costs for ReSTOR® were €5268, €7170 for other MFIOLs, and €8492 without PS. With a 3% discount rate, these costs were €4369, €5071 and €4244, respectively. From the SF perspective, total undiscounted costs were €146 with ReSTOR®, €437 with MFIOLs, and €168 without PS. With a 3% discount rate, these costs were €76, €227 and €747, respectively.

CONCLUSION: PS should decrease the undiscounted costs of vision care from both perspectives. For SF it is highly beneficial while PS remains unlisted for reimbursement. For Society, the discounted incremental cost of avoiding spectacles at age 45 was less than €9/year. ReSTOR® improves patients’ lifestyle and is a cost-effective alternative versus spectacles in presbyopic patients.

PEY13

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

Aagren M1, Arnaveliite S2, Bron A3, Thygesen J1, Baggesen K3, Azuara-Blanco A4, Neville S5, Buchholz P6
1MUUSMANN Research & Consulting, Copenhagen, Denmark
2University Hospital Dijon, Dijon, France
3Rigshospitalet, Copenhagen, Denmark
4County of Northern Jutland, Aalborg, SV, Denmark
5Aberdeen University Hospital, Aberdeen, Scotland, UK
6Allergan Europe, Ettlingen, Germany

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 €2703 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 of the patients’ best eye (negatively correlated, p = 0.005). Best eye visual acuity is also negatively correlated with health care maintenance costs (p = 0.024). With respect to home care costs the correlation is positive but not significant.

CONCLUSIONS: This study shows that late stage glaucoma is associated with considerable health care and—in particular—social care costs (home care). It is an important finding that maintenance health care costs is negatively correlated with visual acuity (and thereby QoL). A lower visual acuity is predictive of lower QoL.

PEY14

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

Stewart WC1, Stewart JA2, Passmore CL1, Panchasara MA2
1Pharmaceutical Research Network, LLC, Charleston, SC, USA
2Pfizer Inc, New York, NY, USA

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 0.30 to 0.68, and the effectiveness metric was the quality-adjusted life year (QALY). 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.
in each country, Latanoprost was 3% less expensive than bimatoprost and travoprost in Norway and Sweden, and the costs of the 3 agents were within 1% of each other in Denmark. Latanoprost dominated (i.e., was more effective and less expensive than) bimatoprost and travoprost in Norway and Sweden. In Denmark, bimatoprost dominated travoprost. Although bimatoprost was slightly less expensive than latanoprost in Denmark (DKK 28,700 vs 29,000, respectively), latanoprost was more effective yielding an incremental cost-effectiveness ratio of DKK 47,871. **CONCLUSIONS:** In Scandinavia, latanoprost was more cost-effective than other available prostaglandin analogues over a 5-year period.

**PEY15**

**LATANOPROST VERSUS TIMOLOL MONOTHERAPY FOR THE TREATMENT OF GLAUCOMA: A COST-EFFECTIVENESS ANALYSIS IN SCandinavia AND THE UK USING A DECISION-ANALYTIC HEALTH ECONOMIC MODEL**

Stewart WC1, Stewart JA2, Mychashki MA2
1Pharmaceutical Research Network, LLC, Charleston, SC, USA, 2Pfizer Inc, New York, NY, USA

**OBJECTIVE:** To assess the relative cost-effectiveness of monotherapy with latanoprost or timolol in the treatment of open-angle glaucoma in Denmark, Norway, Sweden (Scandinavia), and the UK (UK). **METHODS:** Cost-effectiveness analysis was performed using a Markov model. The health states were stable and progressed glaucoma. Transition probabilities for primary open-angle and exfoliation glaucoma were derived from the medical literature, and data concerning practice patterns were obtained from surveys completed by 54 ophthalmologists geographically dispersed throughout each of the countries. Country-specific unit costs were assigned for medications, patient visits, diagnostics, and therapeutic procedures. Quality of life weights for various levels of visual acuity ranged from 0.50 to 0.68. A payer perspective with a 5-year time horizon was adopted and costs were discounted at 3% for Scandinavia or 0.5% for the UK per year. **RESULTS:** Latanoprost was less expensive than timolol, ranging from 5.4% to 6.7% less in Scandinavia and by 2.1% less in the UK. The range of effectiveness (years to progression of glaucoma) between treatment cohorts was narrow, from 0.003 to 0.01, which may have reflected the fact that the design assumed that physicians control most patients’ glaucoma over 5 years by adding or changing therapy. Incremental cost-effectiveness ratios for latanoprost versus timolol were DKK 447,857 in Denmark, NOK 457,212 in Norway, SEK 1,251,126 in Sweden, and GBP 6087 in the UK. **CONCLUSIONS:** Over a 5-year period, latanoprost monotherapy is as cost-effective as traditional timolol generics in Scandinavia and the UK.

**PEY16**

**COST-UTILITY ANALYSIS FOR PEGAPTANIB IN AGE-RELATED MACULAR DEGENERATION IN THE UK: THE IMPACT OF DEMOGRAPHIC AND DISEASE CHARACTERISTICS**

Wolowacz S1, Roskell N2, Maciver F1, Kelly S1
1RTI-Health Solutions, Manchester, Manchester, UK, 2RTI Health Solutions, Manchester, UK

**OBJECTIVES:** To estimate the cost-effectiveness of pegaptanib versus best supportive care for age-related macular degeneration (ARMD) in the UK and to evaluate the impact of patient characteristics. **METHODS:** A 10-year Markov model was constructed composed of 13 health states, 12 visual acuity (VA) states defined by individual Snellen lines and death. Time-dependent transition probabilities for the loss and gain of Snellen lines were derived from parametric survival models fitted to patient-level data from the VISION trial. Survival models were fitted with treatment group and baseline Snellen score as covariates, and other models were fitted with the addition of age, gender, and lesion type or lesion size. Mortality rates were adjusted for the age and gender of the model population. Utility weights elicited using a choice-based method were derived from the published literature. Resource use estimates were developed by structured interview of three consultant ophthalmologists. Other model parameters were obtained from the published literature; unit costs were obtained from national sources (cost year 2005). Uncertainty was explored by probabilistic and univariate sensitivity analysis. **RESULTS:** In the base-case analysis, treatment was targeted to patients with VA of 20/40 to 20/320 and was discontinued if VA fell below 20/320 or by 6 or more lines. The incremental cost per quality adjusted life year gained (IC/QALY) was estimated as £8023 [upper 95% CI: £20,641]. Age had the greatest impact [age <75: £2033/QALY; age ≥75: £11,657/QALY]. Pre-treatment VA was also important [20/40 to 20/320: £8023/QALY; 20/40 to 20/200: £6664/QALY]; Gender, lesion type, and lesion size had little effect on the IC/QALY [all estimates were between £7000 and £9000/QALY]. **CONCLUSIONS:** Pegaptanib treatment is expected to be cost-effective across all groups studied, and marginally more cost-effective in younger patients and those with better pre-treatment VA.

**PEY17**

**COST-EFFECTIVENESS OF PEGAPTANIB IN AGE-RELATED MACULAR DEGENERATION: IMPACT OF DIFFERENCES BETWEEN US AND UK HEALTH CARE SYSTEMS**

Javiri1, Wolowacz S2, Roskell N2, Maciver S1, Kelly S1, Pleil A1, Zlateva G2
1Johns Hopkins School of Medicine, Washington, DC, USA, 2RTI Health Solutions, Manchester, UK

**OBJECTIVES:** To determine the impact of differences in care and services provided to the visually impaired in the UK (UK) and the United States (US) on the cost-effectiveness of pegaptanib in age-related macular degeneration (ARMD). **METHODS:** A Markov model was used to model the visual acuity of a cohort of ARMD patients over a period of 10 years. Country-specific data for the US and UK included mortality rates, treatment-related costs, adverse event treatment patterns, costs associated with excess cases of depression and injury, and services provided to the visually impaired. In the UK, these consisted of visual aids and rehabilitation, community and residential care, and social security benefits. In the US, these included all Medicare costs including skilled nursing facility and nursing home care. Social security benefits have not been quantified in the US and could not be included. **RESULTS:** The incremental benefit of pegaptanib was slightly higher in the US than the UK due to the slightly greater life expectancy (incremental quality-adjusted life year [QALY] estimates were 0.302 and 0.297, respectively). The average per patient cost associated with the treatment was targeted to patients with VA of 20/40 to 20/320 and was discontinued if VA fell below 20/320 or by 6 or more lines. The incremental cost per quality adjusted life year gained (IC/QALY) was estimated as £8023 [upper 95% CI: £20,641]. Age had the greatest impact [age <75: £2033/QALY; age ≥75: £11,657/QALY]. Pre-treatment VA was also important [20/40 to 20/320: £8023/QALY; 20/40 to 20/200: £6664/QALY]; Gender, lesion type, and lesion size had little effect on the IC/QALY [all estimates were between £7000 and £9000/QALY]. **CONCLUSIONS:** Pegaptanib treatment is expected to be cost-effective across all groups studied, and marginally more cost-effective in younger patients and those with better pre-treatment VA.