EAR/EYE/SKIN DISEASES OR DISORDERS

EAR/EYE/SKIN DISEASES OR DISORDERS—Cost Studies

COST-UTILITY OF COCHLEAR IMPLANTS A SOCIETAL PERSPECTIVE ANALYSIS

Barlev A, Hay JW
University of Southern California, Los Angeles, CA, USA

OBJECTIVE: To perform a cost-utility (Cost per QALY) analysis of cochlear implants from a societal perspective. METHODS: Model parameters were based upon literature review of Medline citations. Costs included direct and lifetime maintenance costs, costs of special education and caregiver support costs. Medical costs were inflated to year 2003 using the medical component of the CPI. All cost and outcomes were converted to year 2003 values using a base case annual discount rate of 3%. Cost of treating bacterial meningitis and its complications was included in the model following a recent FDA warning. The Health Utility Index Mark III was used to measure utility changes. The first two years post implantation are not included in the utility calculations, reflecting patient efforts in adapting to the device.

RESULTS: Including savings on special education, support and caregivers time for a child at age 5 who receives cochlear implants there is a net societal savings of $73,000 over a child's lifetime. Lifetime utility gains for a child age five or less were 0.39 and for all other ages 0.22. For a child age 5 the lifetime QALYs gained using a 3% discount is 11.47. One way sensitivity analyses were performed on model parameters. Ranges were selected based on the high and low values from the studies included in the analysis. Based on sensitivity analysis the results remain very favorable with the range of savings to society for the base case of $44,000–$102,000. CONCLUSION: Cochlear implant is a dominant strategy from the societal perspective. The estimated number of OFDs per episode of care was 25.4 for the CD pathway and $237.70 for the OFX pathway. Third tier outcomes were based on expert opinion. All patients were considered cured upon completion of the clinical algorithm. Cost information was taken from reference sources and presented from a payer perspective. The model timeline was 31 days. RESULTS: The estimated cost of otorrhea therapy was $237.70 for the CD pathway and $255.60 for the OFX pathway. The estimated number of OFDs per episode of care was 25.4 for the CD pathway and 23.0 for the OFX pathway. The cost-effectiveness ratios for CD and OFX therapies were $9 and $11 respectively. CONCLUSIONS: CD was both more effective and less costly than OFX for the treatment of otorrhea in patients with tympanostomy tubes. Therefore, CD was the dominant treatment between the two ototopical alternatives.

THE COST-EFFECTIVENESS OF OTOTOPICAL CIPROFLOXACIN AND DEXAMETHASONE VERSUS OTOTOPICAL OFLOXACIN FOR THE TREATMENT OF OTORRHEA IN PATIENTS WITH TYPANOSTOMY TUBES

Roland P1, Waycaster C2
1University of Texas Southwestern Medical Center, Dallas, TX; 2Alcon Labs Inc, Fort Worth, TX, USA

OBJECTIVES: Otorrhea is a common complication of acute otitis media in patients with tympanostomy tubes. The goal of this research was to determine the cost-effectiveness of ciprofloxacin 0.3%/dexamethasone 0.1% (CD) combination otic suspension relative to ofloxacin 0.3% otic solution (OFX) for the treatment of otorrhea. METHODS: A decision-analytic model emulated the ototopical treatment of otorrhea in patients with tympanostomy tubes. The economic outcome was the cost per otorrhea free day (OFD) achieved per episode of care. A clinical algorithm was developed which used three tiers of antimicrobial otorrhea therapy. Each successive tier of the model represented the re-treatment of clinical failures from the preceding tier. First tier therapy compared CD & OFX and used first outcome measures taken from a randomized clinical trial (n = 599). Second tier therapy modeled the use of amoxicillin and clavulanic acid (ACA) with the outcome measures taken from the medical literature. Third tier therapy was modeled as being pathogen specific and could follow one of three separate pathways: 1) intramuscular ceftriaxone; 2) oral fluconazole; and 3) hospitalization and administration of intravenous antibiotics. Third tier outcomes were based on expert opinion. All patients were considered cured upon completion of the clinical algorithm.

A COST-EFFECTIVENESS ANALYSIS OF TREATING OPEN ANGLE GLAUCOMA

Malone DC1, Ward S2, Gesser K1
1University of Arizona, Tucson, AZ, USA; 2Royal Danish School of Pharmacy, Copenhagen, Denmark

Glucoma is a chronic ophthalmic disease and untreated leads to progressive loss of vision. OBJECTIVES: The purpose of this study was...
study was to perform a cost-effectiveness analysis of first-line monotherapy medications for the treatment of glaucoma.

METHODS: This study was a cost-effectiveness analysis of latanoprost, brimonidine and beta-blockers for treatment of glaucoma. Data for the study came from a VA medical center. Patients were eligible if they had a prescription for latanoprost, brimonidine or beta-blockers as monotherapy for glaucoma. The outcomes of interest were change and percent change in intraocular pressure (IOP). The perspective of the analysis was from that of a VA medical center and included direct medical costs.

RESULTS: A total of 318 eyes were evaluated, 78 receiving beta blockers, 34 receiving brimonidine, and 206 receiving latanoprost. The majority of patients were white males and the mean age was 73 years. Patients receiving latanoprost had a mean(SD) IOP reduction of 7.39(4.6)mmHg compared to 6.83(5.0)mmHg for beta-blockers (p = 0.18), and there was no significant difference was observed between the mean for brimonidine (7.14(4.7)mmHg) and beta-blockers (p = 0.76). The mean percent change in IOP was identical for latanoprost and brimonidine (29.6%), but only 24.8% for those receiving beta-blockers. Average (SD) daily cost was $0.05(0.09) for beta-blockers, $0.29(0.39) for brimonidine, and $0.30(0.42) for latanoprost (p < 0.001). However, the most cost-effective agent was brimonidine, with a daily cost of $7.15 for each percent reduction in IOP. Latanoprost demonstrated a daily cost per percent IOP reduction of US$7.58. Both brimonidine and latanoprost were more cost-effective than the beta-blockers with a cost-effectiveness ratio of US$8.42. The incremental cost-effectiveness of using brimonidine or latanoprost compared to beta-blockers was $3.23 and $5.05, respectively. CONCLUSIONS: The results suggest that despite a much lower cost, beta-blockers are not more cost-effective than brimonidine or latanoprost.

PES8

ECONOMIC RESOURCES UTILIZED IN A COHORT OF PATIENTS WITH AGE-RELATED MACULAR DEGENERATION (AMD)

Sharma S1, Dugar A2, Bakal J1, Brown G1, Shah G4
1Queens University, Kingston, ON, Canada; 2Pfizer Global Pharmaceuticals, Pfizer, Inc, New York, NY, USA; 3Willis Eye Hospital, Philadelphia, PA, Philadelphia, PA, USA; 4Barnes Retina Institute, St. Louis, MO, USA

OBJECTIVE: To determine the economic resources utilized in a cohort of patients with age-related macular degeneration.

METHODS: An Institutional Review Board-approved, resource utilization study determined the economic resources used by a cohort of AMD patients over a historical 12-month period from the societal perspective. We evaluated costs by administering an interviewer-administered questionnaire and reviewing participants’ clinic charts. From these two data sources, we evaluated both direct medical costs and direct non-medical costs (such as home support and assessment and low vision rehabilitation including CCTV magnifiers). Indirect costs incurred by family members related to medical visits and supportive care were evaluated; productivity was not evaluated due to the low employment rate in this demographic. Statistical analyses included determining the mean and variance about the main cost drivers. In addition, a series of multivariate models evaluated if visual dysfunction and other clinical variables were associated with economic resources utilized.

RESULTS: The 41 subjects included in this analysis had a mean age of 79.6 years (SD 6.1); 64% were females. Seventy-four percent of the sample had wet AMD, and 38.4% of the sample had bilateral wet disease. The median duration of disease was 16.9 months. The mean logMAR visual acuity of the sample was 0.51 in the better seeing eye (20/65) and 1.17 in the worse seeing eye (20/300). The mean annual cost per patient in this sample was $3944.62. Direct medical costs were the main cost driver, accounting for 91% ($3605) of total costs. Multivariate linear regression using stepwise variable selection demonstrated that both duration (p = 0.02) and visual acuity in the better-seeing eye (p = 0.05) were significantly associated with increasing consumption of direct non-medical resources.

CONCLUSIONS: The economic resources utilized by AMD patients are high, and visual acuity in the better-seeing eye is inversely related to direct non-medical costs.

PES9

ELIGIBILITY, UTILIZATION, AND COSTS IN A CALIFORNIA MEDICAID LUPUS POPULATION

Nichol MB1, Knight TK2, Shi S1, Wallace DJ3, Weisman MH1
1University of Southern California, Los Angeles, CA, USA; 2University of California, Los Angeles, CA, USA; 3Cedars-Sinai Hospital, Los Angeles, CA, USA

OBJECTIVES: To investigate whether ethnicity was associated with differences in Medicaid eligibility, health care utilization, and direct medical costs over time in a systemic lupus erythematosus (SLE) population. METHODS: A retrospective analysis of California Medicaid claims data was conducted on patients with a diagnosis of SLE. The patient monitoring period spans a 7-year (84 month) timeframe. Patient eligibility and month-by-month utilization and costs were computed and compared across ethnic groups. Descriptive statistics are presented with figures or tables detailing activity during the monitoring period. A mixed regression model on patient-level data was used to verify the trends of the aggregate data, controlling for covariates.

RESULTS: Hispanic patients have shorter eligibility compared to other cohorts (about 50% vs. 70% remain eligible at Month 36, respectively). Over time, Hispanics generated lower total costs than other cohorts. Results for inpatient frequency, prescription costs and outpatient/physician/supply costs followed similar patterns. Mixed regression model findings revealed that when adjusted for age, gender and aid program, total costs for Hispanic patients decreased as the length of care increased, in contrast to the experience of other ethnic groups. The interaction between ethnicity and treatment progression measured by quarter was significant (p < 0.0001), but ethnicity as a main effect was not (p = 0.091). Differences in total costs appear small initially, but as the follow-up period gets longer, Hispanic patients experience lower total costs. CONCLUSIONS: These preliminary longitudinal data in a single state Medicaid program may imply that Hispanics with lupus either have slower disease progression than other ethnic groups, are able to return to work faster, or have difficulties with access to care.

PES10

THE COST-EFFECTIVENESS OF METHYLAMINOLEVULINATE PHOTODYNAMIC THERAPY (MAL-PDT) FOR DIFFICULT TO TREAT ACTINIC KERATOSSES

Orme ME, Howard P
Heron Evidence Development, Letchworth, Herts, United Kingdom

OBJECTIVES: Methyl aminolevulinate cream is the first licensed topical PDT product in the UK to treat actinic keratoses (AK). It is activated when the cream is illuminated with a red light source (MAL-PDT). In the UK, the incidence rate of AK is 5%. The aim of this study was to assess the cost-effectiveness of MAL-PDT versus the most commonly used intervention, cryotherapy. METHODS: Clinical outcomes were obtained from a multicentre comparative trial of difficult to treat AK (Foley et al. Journal of Dermatol Treat (2003)), defined as thin or non-hyperkeratotic AK on the face or scalp. Resource use was from a Delphi panel of dermatologists and costs from standard UK