ASSOCIATION BETWEEN MORTALITY AND VISUAL IMPAIRMENT ESTIMATED FROM A FRENCH NATIONAL SURVEY
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OBJECTIVES: To estimate the association between visual impairment (expressed as low vision (LV) and blindness) and mortality.

METHODS: Two national surveys were pooled together. First, 2075 institutions for children or adults with handicaps, the aged, and psychotic patients were selected at random, in 18 predefined strata, from French Health Ministry files. In total, 15,403 subjects were selected and 14,603 (94.9%) were interviewed. Second, a random, stratified sample of 356,208 persons living in the community was selected, of whom 21,760 subjects were further selected, randomly, and 16,945 (79.7%) were interviewed. Three groups were identified, based on personal interviews: blind, LV, and a control group (CG). Two years later, 14,497 subjects in institutions and 15,648 in the community were questioned again. Data on death were obtained from either the national register or households. Death rates were estimated by age, gender and visual impairment. Weights for national extrapolation came from the 1999 national census. A logistic stepwise regression was used to adjust for other handicaps, activity of daily living (ADL), age, sex, interaction, and institution versus community residence.

RESULTS: The average age of subjects was 38.3 years, 48.6% were male and 11.5% lived in institutions. The death rate (1.76% over 2 years) increased exponentially with age and male gender. This last interaction explained most of the variance and ADL accounted for the balance. The probability of dying was higher in subjects with handicaps: visual (odds ratio[OR] = 2.83), speech (OR = 2.10), brain (OR = 1.53), motor function (OR = 1.42), or auditory (OR = 1.39). Visual impairment was significantly (p < 0.0001) associated with increased risk of mortality (blindness: OR = 2.79; LV: OR = 2.06). CONCLUSIONS: Visual impairment is an independent factor associated with mortality.

ANALYSIS OF CLINICAL EFFICACY OF LATANOPROST VS. THE MOST FREQUENT TREATMENT PATTERN FOR PRIMARY OPEN ANGLE GLAUCOMA (POAG) AND OCULAR HYPERTENSION (OH) IN POLAND
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OBJECTIVES: The aim of the study was comparing latanoprost treatment with the most frequent therapy pattern for POAG and OH in Poland. The most frequently prescribed drug for treatment of POAG and OH in Poland is dorzolamide, representing 30% of total prescriptions. Approximately 25% of prescriptions for POAG represent dorzolamide in polytherapy, the most frequent combination with timolol represents 9% of total prescriptions.

METHODS: We assessed current treatment patterns of POAG and OH based on IMS Health Data from Poland (MAT/September 2003). The clinical efficacy analysis was based on the systematic review in accordance with methodological survey rules based on Cochrane Reviewer’s Handbook. Data were extracted from the randomized controlled trials comparing latanoprost 0.005% once daily vs. dorzolamide t.i.d. and latanoprost 0.005% vs. dorzolamide 2% + timolol 0.5% b.i.d. and entered into the Review Manager computer software. Response to treatment was estimated in accordance with meta-analysis trials, which included Odds Ratio of the observation of minimum 10%, 20%, 30%, 40% IOP reduction in relation to a starting level after 3 months treatment.

RESULTS: In a group of patients treated with latanoprost, the chance of 20%, 30%, 40% IOP reduction in relation to baseline was statistically higher than in dorzolamide group in monotherapy: (20% OR = 7.1; 95% CI 3.1 to 9.5), (30% OR = 6.5; 95% CI 3.3 to 12.6), (40% OR = 7.1; 95% CI 3.6 to 13.9) and also in comparison with combined therapy group (20% OR = 1.7; 95% CI 1.1 to 2.4), (30% OR = 1.4; 95% CI 0.9 to 2.1), (40% OR = 3.5; 95% CI 1.2 to 10.6). A percentage of patients with general or ocular adverse effects was lower in groups treated with latanoprost than in other groups but observed differences were not statistically significant.

CONCLUSIONS: Use of latanoprost in treatment of POAG is more effective than the most frequent treatment pattern in Poland.

EFFECT OF CIRCADIAN INTRA-OCULAR PRESSURE VARIATIONS ON THERAPEUTIC DECISION MAKING: A MODELING APPROACH BASED ON A RANDOMIZED CLINICAL TRIAL
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OBJECTIVES: The aim of our model was to estimate the effect of circadian intra-ocular pressure (IOP) variations on ocular hypertension diagnosis, treatment changes, nocturnal IOP peak control, and daily cumulative pressure on the optic nerve head (ONH).

METHODS: Thirty-four glaucoma patients were included in a double-masked randomized trial. Patients were treated for 2 weeks with either travoprost 0.004% or latanoprost 0.005%, after a 4-week wash-out. Intra-ocular pressure was measured every 4 hours during 1 day. The probability of reaching a predefined threshold (success) was calculated from a normal function. Time spent over an IOP target was calculated using area-under-the-curve weighted by success rate. The nocturnal IOP peak measure was estimated using a stepwise regression predicting the maximal night IOP as a function of day-time IOP measures. Sensitivity analyses were performed.

RESULTS: Before treatment, IOP was more elevated in the morning than the evening. The probability of an IOP exceeding the target value of a diagnosis or therapy varied throughout the day. The IOP variance was an important factor, regardless of the actual IOP value. Travoprost controlled IOP better than latanoprost at 16.00 and 20.00. More patients (up to 34.5%) would reach the IOP target with travoprost. Cumulative time spent above a target IOP was lower (up to 2.7 hours) with travoprost. Diurnal IOP measured at 16:00 was the single most predictive IOP measure of nocturnal peaks. Travoprost would be better at controlling these IOP fluctuations (relative risk up to 1.34).

CONCLUSIONS: The data suggest that 1) ocular hypertension diagnosis and therapeutic decisions should be made early in the morning; and 2) daily IOP control should protect against the deleterious effects of cumulative pressure on the ONH and nocturnal IOP peaks.

EYE/EAR/SKIN DISEASES/DISORDERS
EYE/EAR/SKIN DISEASES/DISORDERS—Cost Studies

A COST-EFFECTIVENESS ANALYSIS OF LATANOPROST IN THE TREATMENT OF OPEN ANGLE GLAUCOMA IN SPAIN
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OBJECTIVES: Glaucoma is a chronic disease and untreated leads to progressive loss of vision. Latanoprost has shown good
intraocular pressure (IOP)-lowering efficacy in patients with open-angle glaucoma. The purpose of this study was to carry out a cost-effectiveness analysis of latanoprost versus timolol, bimatoprost and travoprost in the treatment of glaucoma in Spain. METHODS: A cost-effectiveness analysis was performed by building a decision analytical model. Effectiveness data (treatment success was defined as patient with successful IOP control: ≤18 mmHg) were obtained from published clinical trials measuring IOP-lowering of drugs under evaluation. Health care resource utilization was taken from the aforementioned clinical trials and a local expert panel. Only direct medical costs were included in the model (drug acquisition, diagnostic procedures, ophthalmologist visits and treatment of therapeutic failures). Drug acquisition cost data were obtained from official sources while the rest of the data were taken from a national health care costs database. The perspective selected for this analysis was the National Health Service and the time horizon chosen was for 6 months, the time that patients were included in most of the clinical trials found. RESULTS: Cost per patient associated with the use of timolol, latanoprost, bimatoprost and travoprost was £368, 379.5, 377, and 383, respectively while their cost/effectiveness ratio was 1116, 702, 785, and 912€ per each patient with a treatment success. The incremental cost-effectiveness ratio of using latanoprost compared to timolol, bimatoprost and travoprost was 54, 40, and −32€ per each additional patient achieving optimal IOP control. CONCLUSIONS: The results of this pharmacoeconomic model demonstrates that latanoprost is a more cost-effective option than the rest of evaluated alternatives. Therefore, latanoprost should be considered as the therapeutic option to be selected routinely in the treatment of open-angle glaucoma in Spain.

COST EFFECTIVENESS OF LATANOPROST IN FIRST LINE TREATMENT OF PRIMARY OPEN ANGLE GLAUCOMA IN THE UK

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OBJECTIVES: To estimate the cost effectiveness of first-line latanoprost treatment for POAG compared with beta-blockers, travoprost or bimatoprost using a previously developed economic model. METHODS: A decision analytical model was developed where POAG patients either receive latanoprost, beta-blockers, travoprost or bimatoprost as first-line therapy. Subsequent therapy switches were determined by average time that patients persisted with each therapy. Persistency data was obtained from a retrospective cohort study (Reardon, 2004). IOP controlled days are estimated from this by assuming that switching therapy implies failure to control IOP for half the time on therapy. Resource use was obtained from UK expert opinion and included ophthalmologist consultations, drug usage and glaucoma surgery. The NHS perspective was taken and included direct costs only (NHS 2002 reference costs inflated to 2003). A one-year time horizon was used to capture all relevant resource use and to assess main clinical outcomes. RESULTS: The model estimates that for a cohort of 1000 patients, first-line treatment with latanoprost results in 10,397, 14,341, and 17,142 more days of IOP control than patients treated initially with a beta-blocker, travoprost or bimatoprost respectively. Compared with beta-blockers, first-line latanoprost therapy reduces management and surgical costs. Overall treatment costs are higher for travoprost (£29,597 more) and bimatoprost (£36,650 more) compared with first-line latanoprost therapy due to higher rates of subsequent therapy and surgery. CONCLUSIONS: Overall, compared to other prostaglandins and beta-blockers, latanoprost first-line therapy results in greater benefit to patients in terms of more days of IOP control. Latanoprost first-line therapy compared with travoprost and bimatoprost results in greater persistency and lower costs.

A PHARMACOECONOMIC ANALYSIS OF THE FIXED COMBINATION LATANOPROST/TIMOLOL VERSUS DORZOLAMIDE/TIMOLOL IN THE TREATMENT OF PATIENTS WITH GLAUCOMA IN SPAIN

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OBJECTIVES: Latanoprost/timolol is one of the fixed-combination more used in daily medical practice to treat glaucoma. The aim of this analysis is to carry out a pharmacoeconomic evaluation of two fixed-combinations: latanoprost/timolol (L-T) compared to dorzolamide/timolol (D-T) as second line treatment in patients with glaucoma in Spain. METHODS: A cost-effectiveness analysis was performed by building a decision analytic model. Effectiveness data (patient with an IOP reduction at least of >25%) were obtained from a multicenter-randomized trial showing that the L-T combination had significantly better efficacy in reducing IOP than D-T combination[1]. Health care resource utilisation was taken from the aforementioned clinical trial and a local expert panel. Only direct medical costs were included in the model. Drug acquisition costs were obtained from official sources, while the rest of data were taken from a national health care-cost database. The perspective selected for this analysis was the National Health Service and the time horizon chosen was for 3 months, the time that patients were followed up in the referenced clinical trial. RESULTS: The percentage of patients with a good control of IOP was higher with L-T combination (80 vs 65%, p < 0.01) and the cost/effectiveness ratio was lower with L-T combination than with D-T combination: 719 vs 840€ per each patient with a treatment success. The incremental cost-effectiveness ratio of using L-T combination compared to D-T combination was 196€ per each additional patient achieving optimal IOP control. CONCLUSIONS: This model demonstrates that L-T combination is a more efficient therapeutic option than D-T combination. Therefore, L-T combination should be considered as the second line therapy to be selected routinely when IOP cannot be reduced appropriately with only a drug in Spain. [1] Shin DH, Feldman RM, Sheu W-P. Ophthalmology 2004;111:276–82.

RESOURCE UTILIZATION OF END-STAGE GLAUCOMA PATIENTS RECEIVING LOW VISION CARE: A US MULTI-SITE RETROSPECTIVE STUDY

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OBJECTIVES: To estimate resource utilization and costs of end-stage glaucoma patients receiving low vision care (LVC) via a multi-center retrospective cohort design. METHODS: A random sample of 61 open-angle glaucoma charts from 2 US LVC facilities with ophthalmologic follow-up was retrospectively reviewed. Patients with a diagnosis of primary open-angle glaucoma were followed for at least two years within the time window from 1998–2003. Clinical and economic data were abstracted beginning with initial low vision visit. Clinical data collected included: patient demographics, baseline medical and