glaucoma visited practitioners more often (+0.74 / year), had more exams (0.42), and were more likely to be using drug combinations (+28.5%) and to be hospitalised (+16.2%). Drugs represented the bulk of the expenses followed by exams and office visits. Two main clinical factors contributed to costs: abnormalities of the papilla due to the presence of glaucoma (+ EURO 96.43) and the number of treatment switches (+ EURO 127.62 / switch). These were followed by IOP (+ EURO 7.08 / mmHg) and VA (+ EURO 41.37 / 2 Lines lost VA). In comparison to work conducted in the mid-nineties, drug costs increased while hospital costs decreased, although methodologies were different. CONCLUSION: Two independent factors explained the bulk of total cost variance: the presence of glaucoma and therapy switches. They contributed independently in an additive way to total cost. Under isotropic hypotheses, effective early treatment strategies aimed at postponing the effects of glaucoma and controlling IOP are expected to be cost saving in the long-term.

**PES3**

**LIFE-LONG SOCIETAL NET VALUE OF GLAUCOMA TREATMENT: A MARKOV MODEL APPROACH**

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**OBJECTIVE:** To assess and to identify the key variables of the life-long societal net value of glaucoma treatment.

**METHODS:** A Markov model was used to reproduce the average discounted cost of glaucoma treatment over 40 years in France on a 47-year-old cohort (52% female). Clinical states were first to fourth line treatment, no treatment, laser, surgery, blindness and death. All patients started first line, went successively to the next line after failure. After each failure (and always after the fourth line) patients could have either laser or surgery followed by no treatment, or a new first line treatment. Transition probabilities and resource utilisation came from of a cross-sectional study with 5 years retrospective data collection for the glaucoma treatment, and from national statistics. In-patient and out-patient direct medical costs and indirect costs were estimated from a societal point of view. The discount rate was fixed at 5%. Sensitivity analyses and second order Monte-Carlo simulation were performed.

**RESULTS:** Life expectancy of this cohort was 32.5 years. Discounted total cost was €6,990 compared to €14,133 without discounting. Patients spent 12.3 years in first line, 5.1 in second, 3.9 in third, and 3.2 in fourth, and 5.7 without treatment. They had 1.1 laser treatments and 1.2 surgeries on average. They were legally blind for 2.1 years on average. Increasing first line treatment duration by 25% would reduce discounted total cost to €6,709, or €13,368 without discounting. Patients would stay 1.9 years more in first line, 0.8 years less in second, 0.6 years less in third, 0.6 years less in fourth and 0.3 years less without treatment. The use of surgery and laser would decrease by 10%. CONCLUSION: Increasing first line glaucoma treatment duration is a cost saving approach over life of a patient according to our model.

**PES4**

**A DISEASE SEVERITY STAGING SYSTEM FOR MEASURING THE COST OF GLAUCOMA PROGRESSION IN EUROPE**

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**OBJECTIVES:** In order to conduct a multi-national retrospective chart review with the purposes of assessing resource utilization and costs associated with disease progression in Europe, a glaucoma staging system (GSS) was needed. To date no universally accepted GSS exists, particularly one that takes into account economic considerations. We developed and tested a modified system to allow for unambiguous stage assignment of patients experiencing varied severity of disease. METHODS: A review of currently developed GSSs was conducted and the Bascom Palmer GSS was selected as most adaptable for economic analyses. A modified-Delphi panel of physicians specializing in glaucoma treatment suggested modifications to the system, with the end goal of assessing the economic impact of treating glaucoma. Three centers were identified in each of the four participating countries: France, Germany, Italy and U.K. Approximately 12 charts per center were selected based on the inclusion/exclusion criteria described in the study protocol. The revised GSS was applied on all identified charts to classify patients by disease severity. Clinical and demographic data were obtained from the charts and national-level financial data were obtained from health economists in each country. **RESULTS:** The final GSS comprises six stages based principally on visual field parameters. Each stage disease definition was based on poor visual acuity and inability to perform visual fields. The staging system was able to classify over 100 identified charts of glaucoma patients from normal to end-stage disease, and facilitated resource utilization abstraction by individual stage. **CONCLUSIONS:** An improved GSS to track progression was designed which allows staging of patients from historical chart data. This GSS may be used to monitor long-term progression and is a useful tool for the purposes of assessing the economic impact of glaucoma progression. The tool should be tested prospectively to determine its ultimate utility in clinical practice.

**PES5**

**COST-UTILITY ANALYSIS OF TIMOLOL VERSUS LATANOPROST VERSUS TRAVOPROST IN THE TREATMENT OF GLAUCOMA AND OCULAR HYPERTENSION**

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