

COST-UTILITY ANALYSIS OF THERAPY FOR GLAUCOMA – A PILOT STUDY FOR REPUBLIC OF NORTH MACEDONIA

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INTRODUCTION

- ✓ Glaucoma is a chronic optic neuropathy related to significant clinical, social and economic burden for the patients and society as a whole.
- ✓ It is a disease that requires lifelong therapy and Intraocular pressure control.
- ✓ Glaucoma treatment should be individually tailored according to the severity of the disease, the appropriateness and efficacy of the prescribed medication.

AIM OF THE STUDY

- ✓ The study assessed the cost-effectiveness of therapies included in the therapeutic guidelines for glaucoma patients in the Republic of North Macedonia.

MATERIALS AND METHODS

- ✓ Cost-utility analysis was performed from the healthcare perspective;
- ✓ The analysis was based on real-world data for 236 glaucoma patients in 2020.
- ✓ The costs within a year for each alternative (laser, surgical or pharmacotherapy) were evaluated using top-down approach;
- ✓ Costs for laser and surgical procedure were paid only once per patient and no subsequent pharmacotherapy was needed;
- ✓ Data for quality of life came from EQ-5D-5L questionnaire as Quality-adjusted life years (QALYs) were calculated for 1-year;
- ✓ Cost-utility was expressed in incremental cost-effectiveness ratio;
- ✓ Cost-effectiveness plane and Tornado diagram were generated to illustrate the cost-effectiveness of treating glaucoma with the available approaches.

RESULTS

- ✓ Mean annual cost per patient and QALYs values in the group on medication therapy were 239.11 € (SD = 4.54) and 0.77 (SD = 0.14), 22.50 € and 0.52 (SD = 0.11) for laser therapy and 562.50 € and 0.55 (SD = 0.06) for surgery, respectively;
- ✓ Pharmacotherapy (beta-blockers, carbonic anhydrase inhibitors) was dominant over surgical therapy as it was associated with lower costs and a higher value for QALYs ($\Delta c = -323.39$ € and $\Delta QALY = 0.22$) (**figure 1**);
- ✓ Surgical therapy compared to laser therapy led to higher costs and greater QALYs as the incremental ratio of 15,329.78 € was higher than 3-times gross domestic product per capita for the Republic of North Macedonia (14,617.95 € in 2020);
- ✓ One-way sensitivity analysis showed that in all cases pharmacotherapy remained dominant alternative except decreasing QALYs with 30% (**figure 2**).

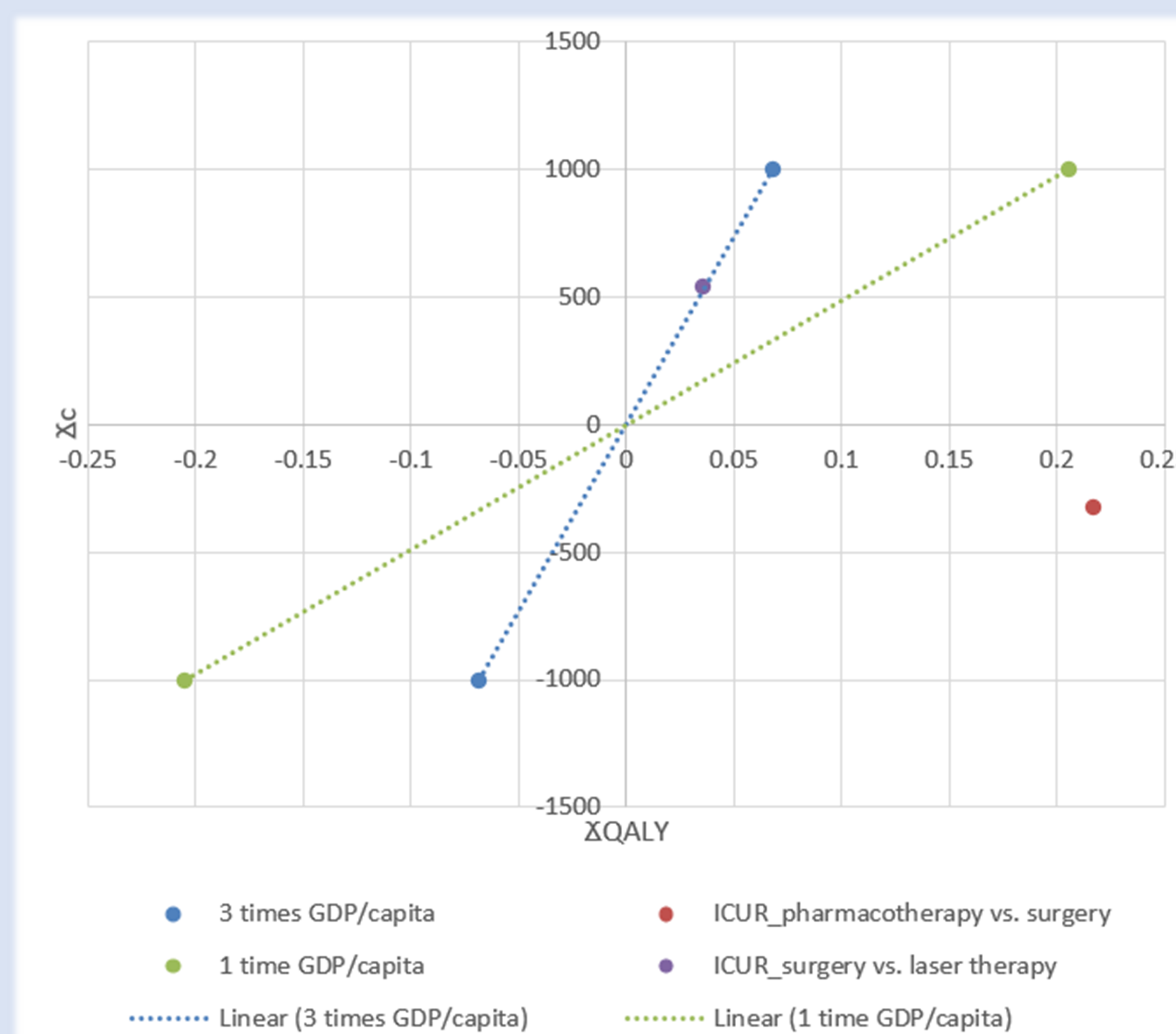


Figure 1. Cost-effectiveness plane

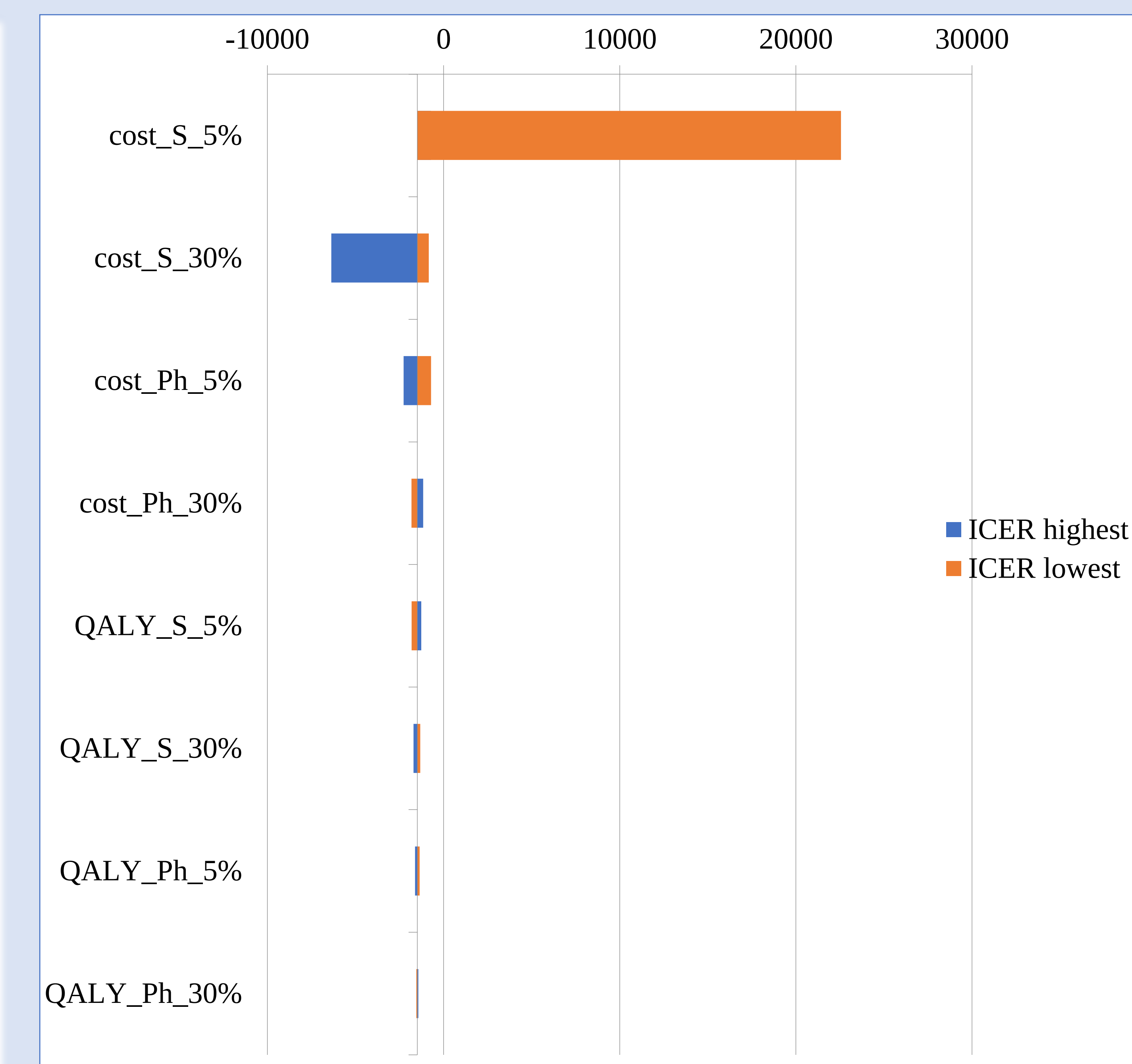


Figure 2. Sensitivity analysis

CONCLUSIONS

- ✓ This real-world evidence demonstrates the cost-effectiveness of pharmacotherapy for glaucoma from the healthcare perspective in the Republic of North Macedonia