SENSORY SYSTEMS DISORDERS - Cost Studies

PSS5

BEVACIZUMAB VERSUS RANIBIZUMAB FOR AGE-RELATED MACULAR DEGENERATION (AMD): A BUDGET IMPACT ANALYSIS

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OBJECTIVES: The use of intravitreal injection of vascular endothelial growth factor inhibitors is an effective treatment for AMD and trials have showed similar clinical effects of bevacizumab and ranibizumab. The aim of this study was to estimate the budget impact for Brazilian Ministry of Health (MoH) recommending ranibizumab instead of bevacizumab for AMD. **METHODS:** We did a deterministic budget impact analysis, with the MoH perspective, comparing the use of ranibizumab and bevacizumab for wet AMD. The target population was estimated by extrapolating epidemiologic data to the Brazilian population. Data about dosage, administration and fractioning were extracted from literature. Prices were obtained with the Brazilian regulatory agency, applying potential discounting benefits. This analysis did not consider the cost of the fractioning process because it will be assumed by the states and not by the MoH. **RESULTS:** The considered price of the ranibizumab vial was US$ 962.86 (fractioning is not an option). In contrast, a 4 mL vial of bevacizumab would cost US$ 410.86 (US$ 5.14 each 0.05 mL dose, resulting in 80 doses/vial). Therefore, the expenses of one year on ranibizumab would be about US$ 11,554.37 and about US$ 61.63 for bevacizumab (12 injections for both). Thus, the use of ranibizumab instead of bevacizumab for treating 467,600 people would be related with a US$ 5,374,007,960.48 budget impact. The sensitivity analyses also demonstrated a budget impact of US$ 3,097,416,007.65 and US$ 5,287,555,101.51 (1 dose/vial and 20 doses/vial, respectively). **CONCLUSIONS:** Although not a label indication, bevacizumab has been widely adopted in clinical practice. As presented above, even with inefficient fractioning methods, the use of bevacizumab would bring substantial savings to MoH resources. Even the need of preserving the sterility of the solution being a real-world worry, stability studies have showed the maintenance of the solution characteristics through adequate handling and storage.

PSS6

COST-OF-ILLNESS OF CHRONIC LYMPHOEDEMA PATIENTS IN HAMBURG AND SUBURBAN REGION

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OBJECTIVES: Chronic lymphedema is of particular interest from the socioeconomic point of view, since it is accompanied with high costs, disease burden and permanent need of medical treatment. The economic and social impact can increase if complications such as erysipelas and ulcers develop. Therefore, cost-of-illness of patients with lymphoedema or lipoedema should be known. **METHODS:** Patients with chronic primary or secondary lymph- or lipoedema of upper or lower limbs, with at most 6 months of disease duration, were enrolled in an observational, cross-sectional study in Hamburg and surroundings (population of approximately 4 Mio inhabitants, 90% of which are insured in the statutory health insurance (SHI) and 10% in private insurance). Standardized clinical examinations and patient interviews were carried out. The oedemas were documented via digital photography as well as further available patient data. Resource utilizations were collected. From the societal perspective direct medical, non - medical and indirect costs were computed. **RESULTS:** A total of 348 patients were enrolled and interviewed. 90.8% of them were female and had a mean age of 57.3± 14.5 years. Mean annual costs per lymphoedema were €8121. These costs consisted of 58% direct (€4708) and 42% indirect (€3413) costs. The SHI accounted for about €5552 expenses and the patient €494.20 out-of-pocket costs. Conducted subgroup analyses on (a) arm vs leg oedema and (b) primary vs secondary vs lipo-lymphoedema did not show significant differences in costs. The main costs drivers in this study were medical treatment and disability costs. **CONCLUSIONS:** The treatment of patients with chronic lymphoedema is associated with high direct and indirect costs.

PSS7

C-REALITY (CANADIAN BURDEN OF DIABETIC MACULAR EDEMA OBSERVATIONAL STUDY): 6-MONTH FINDINGS

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OBJECTIVES: To characterize the economic and societal burden of Diabetic Macular Edema (DME) in Canada. **METHODS:** Patients with clinically significant macular edema (CSME) were enrolled by ophthalmologists and retinal specialists across Canada. Patients were followed over a 6-month period to combine prospective data collected during monthly telephone interviews and at sites at months 0, 3 and 6. Visual acuity (VA) was measured and DME-related health care resource information was collected. Patient health-related quality of life (HRQOL) was measured using the National Eye Institute Visual Functioning Questionnaire (VFQ-25), and the EuroQol Five Dimensions (EQ-5D). **RESULTS:** A total of 145 patients [mean age 63.7 years (range: 30-86 yrs); 52% male; 81% Type 2 diabetes; mean duration of diabetes 18 years (range: 1-62 yrs); 72% bilateral CSME] were enrolled from 16 sites across 6 provinces in Canada. At baseline, the mean VA was 20/60 (range: 20/20-20/800) across all eyes diagnosed with CSME (249 eyes). Sixty-three percent of patients had VA severity in the eye diagnosed with DME (worse seeing eye if both eyes diagnosed) of normal/mild vision loss (VA 20/10 to > 20/80), 10% moderate vision loss (VA ≤ 20/80 to > 20/200), and 26% severe vision loss/nearly blind (VA ≤ 20/200). At month 6, the mean VFQ-25 composite score was 79.6, the mean EQ-5D utility score was 0.78, and the EQ visual analogue scale (VAS) score was 71.0. The average 6-month DME-related cost per patient was $2,092 across all patients (95% confidence interval: $1,694 to $2,490). The cost was $1,776 for patients with normal/mild vision loss, $1,845 for patients with moderate vision loss, and $3,007 for patients with severe vision loss/nearly blind. **CONCLUSIONS:** DME is associated with limitations in functional ability and quality of life. In addition, the DME-related cost is substantial to the Canadian health care system.

PSS8

NON-INTERVENTIONAL STUDY ON THE BURDEN OF ILLNESS IN DIABETIC MACULAR EDEMA (DME) IN BELGIUM

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OBJECTIVES: To study real-life patient characteristics, treatment patterns and costs associated with DME and visual acuity (VA) level. **METHODS:** The study aimed to recruit 100 patients distributed evenly over 4 categories defined by last measured VA. 1-year retrospective data were collected from medical records. Annual direct costs were calculated from resource use in medical records and official unit costs (€ 2011). Self-reported economic burden was collected via Short Form Health and Labour Questionnaire (SF-HLQ). Indirect costs (€ 2011) included personal expenses and caregiver burden (SF-HLQ). **RESULTS:** Thirteen Belgian ophthalmologists recruited 32, 12, 14 and 6 DME patients for VA categories ≥20/50, 20/63-20/160, 20/200-20/400 and <20/400 respectively. VA was stable during the study in 86% of patients. Recruitment for lower VA categories was difficult due to long-term vision conservation with current treatments, lack of differentiation between lowest categories in medical records and discontinuation of ophthalmologist care in lowest categories. 75% of patients had bilateral DME. 68% were treated for DME during the study, of which 60% in both eyes. 50% received photocoagulation, 33% intravitreal drugs. Less than 4% of patients had paid work; 17% received disability replacement income. Total direct medical costs in patients receiving active treatment ranged from €960 (lowest VA) to €3,058. 59% of direct costs were due to monitoring and vision support, 39% to DME treatment. Indirect cost trends were less intuitive due to small samples and large variations. Annual costs grouped by 2 highest and 2 lowest VA levels, were respectively €114 and €312 for visual aids, €407 and €3,854 for home care. **CONCLUSIONS:** The majority of DME patients had bilateral disease. Except for the lowest VA, direct medical costs increased with VA decrease. Indirect costs were substantially higher at lower VA levels. Low sample sizes in some categories did not allow statistical analysis of cost differences.

PSS9

COST OF BLINDNESS AND VISUAL IMPAIRMENT IN SLOVAKIA

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OBJECTIVES: To measure the burden of the disease and provide a basis for the health care policy decisions. **METHODS:** The analysis was performed based on the several data sources. Data on prevalence of bilateral blindness and visual impairment were obtained from the official Annual Report on the Ophthalmic Clinics Activities. Cost analysis was performed from the Health and Social Insurance perspective and reflects the real costs of health care payers in 2010. Information on health care and social expenditure were obtained from State Health and Social Insurance Funds. As detailed data on expenditures were not always available in a necessary structure, the missing data were collected in the retrospective patient survey. Both direct and indirect costs were evaluated and divided by the cost type and level of visual impairment. For the estimation of indirect costs Capital method was used. Patient survey was conducted on randomly collected geographically homogeneous sample of 89 respondents from all over Slovakia. **RESULTS:** A total of 17 201 persons with bilateral blindness or visual impairment were identified in 2010. Total yearly expenditures were 63 677 300 €. Direct costs counted only for 7% (4 468 112 €) of total costs and the most of them were caused by hospitalisations (4 001 539 €) and medical devices (307 739 €). The indirect costs counted for 59 209 188 €. The highest share represented loss of productivity (69%), followed by disability pensions (17%) and compensation of medical devices (14%). **CONCLUSIONS:** The evidence of cost-effectiveness must be demonstrated in order to get reimbursement in Slovakia. According the Slovak guidelines indirect costs are accepted only in exceptional cases. Indirect costs of blindness and visual impairment count more than two thirds of total costs and therefore should be considered in health care policy evaluations.

PSS10

ECONOMICAL BURDEN OF SEVERE VISUAL IMPAIRMENT AND BLINDNESS – A SYSTEMATIC REVIEW

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OBJECTIVES: Visual impairment and blindness pose a significant burden in terms of costs on the affected individual as well as society. In addition to a significant loss of quality of life associated with these impairments, a loss of independence leading to increased dependence on caretakers and inability to engage in income generating activities add to the overall societal cost. As there are currently next to no data capturing this impact available for Germany we conducted a systematic review of the literature to estimate the costs of visual impairment and blindness for Germany and close this gap. **METHODS:** A systematic literature search of the main medical and economic information databases was conducted from January-April