

The literature review retrieved 5,676 studies of which 19 fulfilled the eligibility criteria. Sixteen articles compared different pharmaceutical therapies and 3 studies compared non-pharmacological treatments to pharmaceutical therapies. Eleven studies included economic evaluations on refractory epilepsy, 4 on Lennox-Gastaut Syndrome and 5 on different epileptic seizure types. Eight were cost-effectiveness analyses, 10 were cost-utility analyses and one presented both. Ten studies compared newer adjunctive antiepileptic drugs (AEDs) to standard therapy alone. Among the various adjunctive AEDs, lacosamide and oxcarbazepine were the most cost-effective AEDs compared to standard therapy alone, with ICERs varying from dominant to (2015US)\$47,383/QALY. One study also presented 5 ICERs on newer AEDs used as monotherapy compared to standard therapy and 4 were dominated or subject to extended dominance. Seven studies compared different adjunctive AEDs to each other. Rufinamide was the most studied AED (n=3) and ICERs presented ranged from (2015US)\$263,407/QALY to \$391,129/QALY when compared to lamotrigine in Lennox-Gastaut syndrome. Among the studies comparing non-pharmacological treatments to standard therapy, the ICERs ranged from (2015US)\$4,098/QALY to \$117,505/QALY. **CONCLUSIONS:** Results suggest that lacosamide and oxcarbazepine are cost-effective adjunctive AEDs compared to standard therapy alone. However, newer AEDs used as monotherapy seem not cost-effective whereas alternative non-pharmacological interventions could be cost-effective compared to standard therapy. This review provides an overview of the cost-effectiveness of treatments in epilepsy and could serve in the realization of future economic evaluations.

PND49

COST-EFFECTIVENESS OF NEW THERAPIES FOR MULTIPLE SCLEROSIS IN SPAIN

Boix B¹, Figueras M¹, Riera M²

¹Novartis Farmaceutica S.A., Barcelona, Spain, ²Freelancer, Manacor, Spain

OBJECTIVES: New therapies for Relapsing-Remitting Multiple Sclerosis have recently emerged, adding to the complexity of decision-making. The objective of this abstract was to assess cost-effectiveness of dimethyl fumarate (DMF), teriflunomide, alemtuzumab, natalizumab and fingolimod versus their phase III comparators in Spain. **METHODS:** Annual costs per relapse avoided with each therapy versus their trial comparators were estimated. When subgroup analyses from clinical trials were available, they were used to differentiate efficiency in different patient subgroups or to approximate populations to treatment indication. Efficacy inputs were previously published as Annualized Relapse Rates (ARR) from trials or trial subgroup analyses. Economic inputs included drug and relapse costs; drug annual costs were calculated according to Spanish list prices, and an average relapse cost of 1.641,67€ was applied according to a recent publication. **RESULTS:** Cost per relapse avoided was 63.177€ and 83.458€ for DMF vs placebo in naïve and pre-treated patients, respectively. Teriflunomide resulted in 74.630€ to 79.117€ per relapse avoided when compared to placebo, and had higher ARR and lower costs than subcutaneous interferon-beta-1a, resulting in an incremental cost of 35.520€ per relapse avoided for interferon vs teriflunomide. Alemtuzumab had a cost per relapse avoided of 58.951€ vs subcutaneous interferon-beta-1a in previously treated patients. Result for natalizumab was 37.154€ vs placebo, while the incremental cost per event avoided with fingolimod in previously treated patients was 30.493€ vs intramuscular interferon-beta-1a. **CONCLUSIONS:** Analysis of incremental costs per relapse avoided ranged from 30.493€ for fingolimod vs intramuscular interferon-beta-1a to 83.458€ for DMF vs placebo, both in pre-treated patients. Drug comparator and patient populations aimed to be determinant factors to explain relative efficiencies.

PND50

COST EFFECTIVENESS OF SODIUM OXYBATE IN TREATMENT OF CATAPLEXY IN PATIENTS WITH NARCOLEPSY IN TURKEY

Tatar M¹, Tuna E², Caglayan B³, Sarica N³, Firidin A³

¹Hacettepe University, Ankara, Turkey, ²Polar Health Economics and Policy Consultancy, Ankara, Turkey, ³UCB Pharma, Istanbul, Turkey

OBJECTIVES: Cataplexy is a frequently observed symptom of narcolepsy which is treated mainly with antidepressants. However, as their success rate is very low, the unmet need is considerable. Sodium Oxybate is a novel treatment and the first product developed to treat cataplexy in patients with narcolepsy. Given the low prevalence and high unmet need, inclusion of sodium oxybate in the positive list of the Social Security Institution of Turkey is very important. This study aims at providing evidence about the cost effectiveness of sodium oxybate in Turkey. **METHODS:** As narcolepsy is a rare disease and sodium oxybate is the first product to treat the disease, there isn't a global economic model to be adapted to the Turkish setting. That is why a simple decision model was developed to estimate the cost effectiveness. The results of the clinical trials of the product revealed that the annual number of cataplexy attacks prevented with placebo was 671, whereas the figure was 1,845 with sodium oxybate. As the Turkish guidelines for cost effectiveness analysis doesn't allow using QALY data, only the number of prevented cataplexy attacks were used as an outcome measure. For the cost section, only the annual cost of sodium oxybate was used to calculate the incremental cost effectiveness ratio. The study was undertaken from the payer's perspective. **RESULTS:** The cost per cataplexy attack prevented was found as 17.12 TL. As the incremental cataplexy attacks prevented was 1,174 annually, the total cost per prevented cataplexy attacks was estimated as 20.098 TL. Although Turkey doesn't have an explicit threshold to be used in cost effectiveness decisions, this figure is acceptable given the fact that narcolepsy is a rare disease and there is a huge unmet need. **CONCLUSIONS:** Inclusion of sodium oxybate to the Turkish positive list of drugs is a cost effective option.

PND51

COST-EFFECTIVENESS ANALYSIS OF PRAMIPEXOLE EXTENDED RELEASE MONOTHERAPY IN EARLY PARKINSON'S DISEASE

Belousov D¹, Afanasieva E²

¹Center of Pharmacoeconomic Research LLC, Moscow, Russia, ²LLC «Center of Pharmacoeconomic Research», Moscow, Russia

OBJECTIVES: To evaluate the cost-effectiveness of modern anti-Parkinson drugs in monotherapy early stages of Parkinson's disease (PD) in the Russian Federation. **METHODS:** For analysis of market data regarding PD treatment products we used IMS Health Russia database (2014). The target population was newly diagnosed PD patients over 60 years in the early clinical stages according to Hoehn and Yahr functional scale (HY I-III stage). The time horizon for this analysis was taken for 1-year period. Comparison drugs: piribedil CR, pramipexole ER, ropinirole ER and rasagiline. Effectiveness of anti-Parkinson drugs was evaluated as the percentage of patients who responded to treatment. In the analysis we took into account the costs associated with adverse drugs reactions (ADR). Discounting outcomes and costs was not conducted because the time horizon of the analysis did not exceed 1 year. Bivariate sensitivity analysis (SA) was performed. **RESULTS:** The cost of the 1st year therapy of compared drugs was: 28,822, 20,810, 57,449 and 54,332 rubles for piribedil CR, pramipexole ER, ropinirole ER and rasagiline respectively. Total therapy cost was estimated based on 1st year therapy cost and ADR costs. Total costs for comparator drugs constituted 28,930, 21,009, 57,576 and 54,381 rubles for piribedil CR, pramipexole ER, ropinirole ER and rasagiline respectively. The effectiveness of comparator drugs was 42.0%, 66.7%, 64.0%, and 64.0% for piribedil CR, pramipexole ER, ropinirole ER and rasagiline respectively. During the analysis we obtained results indicating that pramipexole ER has the lowest CER – 31,499 rub. **CONCLUSIONS:** Pramipexole ER has the lowest CER (31,499 rub. per year for one patient responded to anti-Parkinson therapy). SA confirmed these results. Pramipexole ER was the dominant strategy for PD treatment, demonstrating higher effectiveness at lower costs.

PND52

THE COST EFFECTIVENESS OF DELAYED-RELEASE DIMETHYL FUMARATE VERSUS INTERFERON BETA-1B IN A SWEDISH SETTING

Granfeldt D¹, Björstad Å¹, Öhrman S², Björholt I¹

¹Nordic health economics, Göteborg, Sweden, ²Biogen, Upplands Väsby, Sweden

OBJECTIVES: Multiple sclerosis (MS) is a neurodegenerative and demyelinating disease of the central nervous system leading to impaired nerve impulse conduction with concomitant symptoms such as weakness in limbs, muscle stiffness or spasms, paralysis, problems with vision, fatigue and cognitive changes. Current disease modifying therapies indicated for first-line treatment of relapsing-remitting MS (RRMS) in Sweden are injection therapies including beta interferons and glatiramer acetate, and the two recently approved oral treatments delayed-release dimethyl fumarate (DMF; also known as gastro-resistant DMF) and teriflunomide. The objective of the present study was to evaluate the cost-effectiveness of DMF (versus the least costly first-line alternative interferon beta-1b) **METHODS:** The analyses were performed in a Markov model with health states describing the management and consequences of RRMS in terms of relapses and progression through a series of disability states, based upon the Kurtzke Expanded Disability Status Scale (EDSS). The societal and the payer perspectives for a time horizon of 30 years were applied for the base-case analyses. **RESULTS:** The results from the societal as well as the payer perspective showed that DMF was dominant as compared to interferon beta for the treatment of RRMS in Sweden, offering cost-savings and QALY gain of 0.476. One-way sensitivity analyses ($\pm 25\%$ of base-case) showed that DMF remained dominant in all variations tested with the exception of the treatment effect on disability progression rate. Probabilistic sensitivity analyses from the societal perspective showed that DMF was dominant in 61% of the simulations. **CONCLUSIONS:** In the present analyses DMF dominated interferon beta-1b from the societal as well as payer perspective, but showed sensitivity to variations in the variable treatment effect on disease progression. This study was sponsored by Biogen.

PND53

ABOBOTULINUMTOXIN A IN THE MANAGEMENT OF CERVICAL DYSTONIA IN THE UNITED KINGDOM: A COST-EFFECTIVENESS ANALYSIS

Desai K¹, Muthukumar M¹, Abogunrin S¹, Harrower T², Dinet J³, Gabriel S³

¹Evidera, London, UK, ²Royal Devon and Exeter Foundation Trust Hospital, Exeter, UK, ³IPSEN Pharma, Boulogne-Billancourt, France

OBJECTIVES: Botulinum neurotoxin type A is effective in managing cervical dystonia (CD), a disorder causing painful and involuntary contraction of neck and shoulder muscles and abnormal posture in middle-aged adults. However, the cost-effectiveness of abobotulinumtoxinA for the treatment of CD in the United Kingdom (UK) has not been evaluated. **METHODS:** A Markov model was developed from the UK payer perspective to evaluate the cost-effectiveness of abobotulinumtoxinA compared to best supportive care (BSC) with a lifetime horizon and health states for response, non-response, secondary non-response and BSC in CD patients (mean age: 53 years; 37% male population). The clinical improvement in Toronto Western Spasmodic Torticollis Rating Scale (TWSTRS) was mapped to utility using the data from the randomized Phase III trial of abobotulinumtoxinA (NCT00288509). Healthcare resource costs and other model inputs were obtained from British National Formulary, Personal Social Services Research Unit, published literature or clinical experts. Costs and outcomes were discounted at 3.5% per annum. **RESULTS:** The incremental lifetime quality adjusted life years (QALY) gained in the abobotulinumtoxinA arm compared to BSC was 0.25 per patient, whereas the incremental cost was £6,234, corresponding to an incremental cost-effectiveness ratio of £24,936 per QALY. One-way sensitivity analyses showed that the results are sensitive to the proportion of responders to abobotulinumtoxinA at first injection, duration of the reinjection interval, the number of cycles of reinjection allowed amongst primary non-responders and any difference in TWSTRS value at baseline that may exist between patients in BSC and abobotulinumtoxinA arm. Probabilistic sensitivity analysis showed abobotulinumtoxinA to be cost-effective 41% of times in 5000 Monte Carlo simulations, at a threshold of £20,000 per QALY. **CONCLUSIONS:** Using abobotulinumtoxinA in adult patients with CD was not only found to be cost-effective at an acceptable willingness-to-pay threshold in the UK but also provides additional quality of life gains.

PND54

COST-EFFECTIVENESS OF DIMETHYL FUMARATE TREATMENT FOR RELAPSING-REMITTING MULTIPLE SCLEROSIS FROM A DANISH PERSPECTIVE

Olsen J¹, Wren A²¹Incentive Aps., HOLTE, Denmark, ²Biogen Denmark A/S, Copenhagen, Denmark

OBJECTIVES: Relapsing-remitting multiple sclerosis (RRMS) is characterized by periods of relapse and remission, leading to progressive accumulation of disability. Disease-modifying treatments (DMTs) are used in treatment of MS to reduce the frequency of relapses and disease progression. The study objective was to compare the cost effectiveness of dimethyl fumarate with teriflunomide for treatment of RRMS in a Danish setting from a healthcare and societal perspective. **METHODS:** In a cohort based Markov model patients progress through a series of disability states based on the Expanded Disability Status Scale (EDSS). At any time, patients have fixed probabilities of progression and relapse dependent on RRMS or secondary progressive MS (SPMS) status and the EDSS score. Mixed treatment comparisons determined the clinical efficacy of the treatment options that in the model act to delay the progression of the disease and reduce the relapse frequency in patients with RRMS. The model uses one-year cycles, and the base case time frame of the analysis was 30 years. Healthcare and societal costs (including productivity losses) and QALYs for each patient are directly linked to the time the patient spends in each EDSS state. **RESULTS:** In the base case, treatment with dimethyl fumarate compared with teriflunomide is associated with a QALY-gain of 0.21 QALYs, at lower healthcare (DKK -87,547) and societal costs (DKK -132,524), implying that dimethyl fumarate is a dominant strategy. Probabilistic sensitivity analyses were performed, showing that dimethyl fumarate dominates from a healthcare and societal perspective in 67.6% and 72.9% of 5,000 simulations, respectively. One-way sensitivity analyses showed that dimethyl fumarate is cost-saving from a healthcare and societal perspective at a yearly drug-cost difference up to DKK 46,000 and DKK 58,000, respectively. **CONCLUSIONS:** The analysis demonstrates that dimethyl fumarate is a cost-effective and cost saving treatment alternative from a Danish healthcare and societal perspective.

PND55

A COST-EFFECTIVENESS ANALYSIS OF FINGOLIMOD VERSUS DIMETHYL FUMARATE AS A SECOND-LINE DISEASE MODIFYING TREATMENT IN PATIENTS WITH HIGHLY ACTIVE RELAPSING-REMITTING MULTIPLE SCLEROSIS

Raikou M¹, Kalogeropoulou M², Rombopoulos C²¹University of Piraeus, Piraeus, Athens, Greece, ²Novartis Hellas, Metamorfosis, Greece

OBJECTIVES: To assess the cost-effectiveness of fingolimod as a second-line therapy for patients with highly active relapsing-remitting multiple sclerosis using a Markov model applied to Greece. **METHODS:** The analysis was undertaken from the perspective of the Greek NHS and the model was populated with data drawn from the literature and national published sources. Two cohorts of patients, one for the intervention and one for the comparator treatment sequence, are simulated in the model over a 50 year time horizon. Each patient in a given cohort is treated with four lines of treatment or removed from treatment due to death. The analysis is based on the subgroup of highly active relapsing-remitting MS patients despite treatment with a previous DMT as this represents fingolimod's main target population. The discount rate was 3.5% per year. Extensive sensitivity analysis was also undertaken. **RESULTS:** This analysis has shown that the use of fingolimod as second-line treatment compared to DMF in these patients results in an incremental cost-effectiveness ratio of €32,939 per QALY gained over a patient's lifetime for Interferon-beta1-aSC - Fingolimod - BSC - BSC compared to Interferon-beta1-aSC - DMF - BSC - BSC, in €33,783 for Interferon-beta1-aIM - Fingolimod - BSC - BSC compared to Interferon-beta1-aIM - DMF - BSC - BSC and in €32,998 for Glatiramer acetate - Fingolimod - BSC - BSC compared to Glatiramer acetate - DMF - BSC - BSC. The above estimates did not vary substantially across a range of assumptions investigated within the sensitivity analyses. **CONCLUSIONS:** The use of fingolimod as second-line treatment compared to DMF in patients with highly active relapsing-remitting MS in a Greek health care setting results in long-term clinical benefit and it is associated with a modest incremental cost-effectiveness ratio that most decision makers would consider acceptable especially for such a disabling disease.

PND56

COST-UTILITY ANALYSIS OF DELAYED-RELEASE DIMETHYL FUMARATE FOR THE TREATMENT OF RELAPSING-REMITTING MULTIPLE SCLEROSIS IN PORTUGAL

Silva Miguel L¹, de Sá J², Pinheiro B¹, Acosta C³¹CISEP (Research Centre on the Portuguese Economy), Lisbon, Portugal, ²Centro Hospitalar de Lisboa Norte, Lisbon, Portugal, ³Biogen Idec, Lisbon, Portugal

OBJECTIVES: This study aims to assess the cost-utility of delayed-release dimethyl fumarate (DMF; also known as gastro-resistant DMF), a new disease modifying therapy (DMTs), in treatment of patients with Relapsing-Remitting MS (RRMS) in Portugal. **METHODS:** A 1-year cycle Markov model based on the SchARR MS Model was used to simulate disease progression, measured by Kurtzke Expanded Disability Status Scale (EDSS), relapses, and conversion to secondary-progressive MS (SPMS). It was assumed that patients could discontinue first line treatment (DMF or glatiramer acetate) and switch to a second line, but would stop any treatment after conversion to SPMS or progression to EDSS7. Clinical inputs for active treatments (disability progression, relapse rate and discontinuation of ITT population) were estimated on a mixed treatment comparison while natural history was based on DMF clinical trials and London Ontario database. Utility weights for patients and caregivers were derived from DMF clinical trials and the UK-MS Survey. Resource consumption by EDSS and due to relapses was based on published literature relevant to the Portuguese setting. Unit costs were obtained from official sources. The analysis was conducted from the societal perspective, assuming a time horizon of 50 years and a discount rate of 5%, for both costs and benefits. **RESULTS:** When compared to glatiramer acetate, DMF was associated with delay in progression and reduction in annualized relapse rate, resulting in a gain of 0.39 quality adjusted life years (QALYs), but implying a cost increase of 8.971 €. The incremental cost per QALY is thus 17.433 €. Sensitivity analysis shows that results are more sensitive

to disability progression rate. **CONCLUSIONS:** The incremental cost effectiveness ratio of 17.433 € is considerably below the threshold usually accepted for financing medicines in Portugal (around 30.000 €/QALY). Dimethyl Fumarate should be seen as a cost-effective therapy for the Portuguese setting.

PND57

COST-EFFECTIVENESS ANALYSIS OF PEGINTERFERON BETA-1A IN ITALIAN RELAPSING REMITTING MULTIPLE SCLEROSIS MANAGEMENT

Iannazzo S¹, Santoni L², Saleri C², Puma E², Vestri G², Giuliani L¹, Canonico PL³, Centonze D⁴¹SIHS Health Economics Consulting, Torino, Italy, ²Biogen, Milan, Italy, ³Università del Piemonte Orientale, Novara, Italy, ⁴Università Tor Vergata, Rome, Italy

OBJECTIVES: Peginterferon beta-1a is indicated for the treatment of adult relapsing-remitting multiple sclerosis (RRMS) patients. The efficacy and safety of subcutaneous (SC) peginterferon beta-1a (PEGIFN beta-1a) was demonstrated in the randomised double blind Phase 3 placebo-controlled ADVANCE trial. We assessed the cost-effectiveness of PEGIFN beta-1a compared with other injectable first-line RRMS treatments in Italy. **METHODS:** The analysis was developed through a Markov model with lifetime simulation in the perspective of the Italian National Healthcare Service (NHS). Outcomes measurements included life years (LYs), quality adjusted life years (QALYs), lifetime costs, and incremental cost-effectiveness ratio (ICER). The natural progression of disease used in the model was based on previously published literature and modelling exercises. Treatment efficacy (reduction of disability progression and reduction of relapse rate) was derived from published mixed treatment comparison. Unit costs were based on Italian 2015 prices and tariffs, and the published literature. A 3.5% discount rate was applied to costs and benefits. One-way and probabilistic sensitivity analyses were developed and cost-effectiveness acceptability curves generated. **RESULTS:** PEGIFN beta-1a provided numerically longer patient survival (19.94 vs. 19.68-19.81 discounted LYs, respectively), and QALY (9.07 vs 8.06 - 8.55 discounted QALY, respectively). The ICER for SC PEGIFN beta-1a vs. IM interferon beta-1a 30mcg; SC interferon beta-1a 22mcg; SC interferon beta-1b 250mcg; or glatiramer acetate 20mcg was €11,018; €12,504; €10,477; €16,599; €21,536 per QALY respectively. Peginterferon beta-1a dominated interferon beta-1a 44mcg. The outcomes of the sensitivity analyses confirmed the robustness of these results. **CONCLUSIONS:** PEGIFN beta-1a was dominant vs SC interferon beta-1a 44mcg and cost-effective when compared with other approved first-line injectable treatments for RRMS in Italy. The ICERs fall well below the commonly accepted thresholds of €30,000 - €50,000 per QALY gained demonstrating that PEGIFN beta-1a is a cost effective treatment.

PND58

EVALUATION OF THE BURDEN OF PARKINSON'S DISEASE IN MEDICARE AND LINKED LONG TERM CARE POPULATION

Xie L¹, Tan H¹, Ogbomo A², Wang Y¹, Baser O³, Yuce H⁴¹STATinMED Research, Ann Arbor, MI, USA, ²The University of Michigan, Ann Arbor, MI, USA,³STATinMED Research, Columbia University, New York, NY, USA, ⁴New York City College of

Technology-CUNY / STATinMED Research, New York, NY, USA

OBJECTIVES: To examine the economic burden and health care utilization for patients diagnosed with Parkinson's disease using linked data from Medicare and the Long Term Care (LTC) Minimum Data Set (MDS). **METHODS:** Patients were included in the study if they had at least one diagnosis claim for Parkinson's disease (International Classification of Diseases, 9th Revision, Clinical Modification code 332.xx) during the identification period (01JUL2008-31DEC2010). The first Parkinson's disease diagnosis claim date was designated as the index date. Patients were required to be age ≥65 and have continuous health plan enrollment with medical benefits for 6 months pre- and post-index date. Residents in a LTC facility were defined as study patients using two quarterly assessments recorded in the MDS during the 6-month baseline period. Demographic and clinical characteristics and follow-up health care costs and utilizations were described. **RESULTS:** After 1:1 matching, 1,620 patients were included in each group (disease and control patients), and the baseline characteristics were well-balanced. Patients with Parkinson's disease were more likely to have inpatient stays (14.26% vs. 9.51%, p<0.0001), outpatient visits (47.72% vs. 41.11%, p=0.0002), skilled nursing facility (SNF) visits (20.37% vs. 4.51%, p<0.0001), hospice visits (8.64% vs. 1.36%, p<0.0001), and part D pharmacy visit (62.65% vs. 53.33%, p<0.0001). Compared to control patients, higher all-cause health care costs were also observed for Parkinson's disease patients, including inpatient costs (\$2,451 vs. \$1,301, p<0.0001), SNF costs (\$2,503 vs. \$778, p<0.0001), hospice costs (\$1,164 vs. \$245, p<0.0001), total outpatient costs (\$4,477 vs. \$1,304, p<0.0001), pharmacy costs (\$695 vs. \$1,399, p<0.0001) and total costs (\$9,775 vs. \$5,314, p<0.0001). **CONCLUSIONS:** During a period of 12 months, patients diagnosed with Parkinson's disease had higher health care utilization and costs than matched control patients.

PND59

COST-UTILITY ANALYSIS OF PRAMIPEXOLE EXTENDED RELEASE MONOTHERAPY IN EARLY PARKINSON'S DISEASE

Belousov D¹, Afanasieva E²¹Center of Pharmacoeconomic Research LLC, Moscow, Russia, ²LLC «Center of Pharmacoeconomic

Research», Moscow, Russia

OBJECTIVES: To evaluate the cost-utility of modern anti-Parkinson drugs in monotherapy early stages of Parkinson's disease (PD) in the Russian Federation. **METHODS:** For analysis of market data regarding PD treatment products we used IMS Health Russia database (2014). The target population was newly diagnosed PD patients over 60 years in the early clinical stages according to Hoehn and Yahr functional scale (HY I-III stage). Comparison drugs: pramipexole ER, piribedil CR, ropinirole ER and rasagiline. Utility effect of anti-Parkinson drugs was evaluated by quantitative scale UPDRS - Unified Parkinson's Disease Rating Scale, part II (daily activities) and III (the severity of motor disorders). In the analysis we took into account the costs associated with adverse drug reactions (ADR). Discounting