PAR8

HEALTH ECONOMIC EVALUATION OF PATIENTS WITH RHEUMATOID ARTHRITIS (RA) TREATED WITH ADALIMUMAB

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OBJECTIVES: To assess the cost-effectiveness of adalimumab versus etanercept in the management of Belgian patients with moderate to severe RA. Adalimumab is a human anti-TNF monoclonal antibody and is administered every other week, in combination with methotrexate (MTX) or other disease-modifying antirheumatic drugs, or as monotherapy. Two scenarios were developed: one for which each TNF-antagonist was combined with MTX, and one for which each was given as monotherapy. **METHODS:** An incidence-based Markov model was created in MS-Excel, reflecting the current treatment strategies and their associated outcomes. ACR response rates were obtained for adalimumab and etanercept from pivotal clinical trials. After adjustment for differences in trial populations according to the Choi-method, 42.1% of adalimumab-monotherapy patients, 66.7% of adalimumab plus MTX patients, 60.1% of etanercept-monotherapy patients, and 65.6% of etanercept plus MTX patients achieved a ≥20% improvement in ACR criteria. Second-line infliximab therpy and a return to watchful-waiting in case of inadequate response and/or adverse events were also considered. Estimated resource use was provided by 6 rheumatologists. Effectiveness was expressed in QALYs, and calculated according to a validated method (Boggs) from HAQ-DI scores for ACR20 responders and non-responders. The analysis spanned 3 years. **RESULTS:** Etanercept plus MTX and adalimumab plus MTX generated comparable utilities (1.284 vs. 1.287 QALYs), at a slightly higher cost for etanercept (38,970€ vs. 38,578€). An analysis of both as monotherapies resulted in a cost of 28,757€ and 1.138 QALYs for etanercept, and 22,784€ and 1.052 QALYs for adalimumab. The associated incremental cost-effectiveness was 69,971€, based on price-parity. Sensitivity analyses showed that results were sensitive toward variations in AE rates, response rates of second-line infliximab, and modifications in the administration modalities of adalimumab. However, these sensitivities did not affect the comparative results. **CONCLUSIONS:** Adalimumab is comparably effective and cost-effective to etanercept, but at a slightly to moderately lower cost.

PAR9

A COST MINIMISATION ANALYSE FOR STUDYING THE EFFICIENCY OF BIOLOGIC THERAPIES (BT) IN RHEUMATOID ARTHRITIS (RA). OVERVIEW FOR THE SPANISH SETTING

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OBJECTIVE: Adalimumab is a new fully human anti-TNFá monoclonal antibody used to treat moderate to severe rheumatoid arthritis (RA). Adalimumab, just like the other biological therapies (BT), for RA, etanercept and infliximab, has proved to be effective and safe in randomised clinical trials. These BT have different administration routes and dosage profiles so their use might have a different economic impact for health care budgets. There is no evidence about the relative efficiency of the available BT in the Spanish setting and the objective of this research was to undertake an economic evaluation of the three therapies. **METHODS:** Under the assumption of similar efficacy rates, a cost minimisation analysis was performed under the perspective of the Spanish NHS and a time horizon of 1 year, thus only including direct health care costs for the administration of the drugs and the management of adverse events. The adverse events incidences were classified as mild, moderate and severe, and were taken into account as a random variables in order to collect the uncertainly. A decision-analysis model was developed to simulate a cohort of 5000 patients in each iteration so statistically significant differences could be assessed. Data on the incidence of adverse events with each drug was retrieved from randomised clinical trials. Data on resource use was extracted from an expert panel of 2 specialists and data on unit costs from published sources. **RESULTS:** The mean costs per patient treated were 17,229€ for infliximab, 14,289€ for etanercept, and 13,845€ for adalimumab. Differences were statistically significant ($p = 0.00$) in all 10 simulations that were conducted. **CONCLUSION:** In our analyses Adalimumab was the most efficient biologic therapy in patients with AR, that have failed therapy with at least one disease-modifying antirheumatic drugs (DMARD's).

PAR10

PATTERNS OF DOSING WITH ADALIMUMAB AMONG COMMERCIALLY INSURED PATIENTS

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OBJECTIVES: To conduct a descriptive examination of patterns of dosing with adalimumab among a cohort of commercially-insured patients to assess whether dosing frequency in clinical practice is consistent with standard labeling. **METHODS:** Data were obtained from the PharMetrics Patient-Centric Database, which contains integrated medical and pharmacy claims data for approximately 43 million unique patients from 74 health plans across the U.S. All patients with two or more prescriptions for adalimumab during the period January–December 2003 were initially identified and followed for up to 11 months. Dosing frequency was expressed based on the average number of calendar days between injections, which was calculated by dividing the number of elapsed days between prescription claims by the quantity supplied (i.e., number of syringes) for the prescription initiating the interval. Injection frequency was tracked over time based on patients available at each prescription interval, and was also measured specifically among patients with at least six prescription intervals (i.e., seven consecutive prescriptions). For this calculation, the percentage of patients with time between injections that approximated every-week (0–11 days) vs. every-other-week (12 days or more) dosing was calculated. **RESULTS:** A total of 527 patients were available for analysis. The mean age of the sample was 51.3 years; 76.1% were female. The average number of days between injections declined substantially over time, from 16.2 days at the first interval (N = 527) to 12.5 days at the 10th interval (N = 27). As of the sixth interval, 34 patients (23.8%) were receiving injections on an approximate every-week basis, while the remaining 109 patients (76.2%) were dosed every other week. **CONCLUSIONS:** The results of this analysis suggest that the time between adalimumab injections may decline over multiple treatments; furthermore, after substantial use of adalimumab, up to one-quarter of patients may require injections more frequently than what is stipulated in the labeling.

PAR11

A COST EFFICACY ANALYSIS ON ANTI-TNF THERAPY IN ANKYLOSING SPONDYLITIS

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OBJECTIVE: To estimate the cost-efficacy of infliximab and etanercept compared to placebo in patients with ankylosing

spondylitis (AS). **METHODS:** Infliximab and etanercept significantly improve signs and symptoms of AS. We analyzed their cost-efficacy based on incremental benefit versus placebo in their respective AS pivotal trials. Inclusion and exclusion criteria were similar for both trials except for permitted concomitant medications. The base model estimates cost efficacy for maintenance therapy, compared to placebo. Costs were estimated based on average dose for a patient receiving maintenance therapy over a 1-year period. The average number of infliximab vials per dose (4) and total doses/year per patient (8) were obtained from ASSERT trial data. Etanercept was assumed to be administered at 25 mg/dose twice weekly. The ASAS 20, ASAS partial remission, DCART 20 response rates, and percent improvement in BASFI at week 24 were used as efficacy measures. **RESULTS:** In the infliximab trial, 201 patients received infliximab (5 mg/kg) and 78 patients received placebo. In the etanercept trial, 138 patients were treated with etanercept 25 mg twice weekly and 139 received placebo. The cost per responder for infliximab as measured by ASAS 20, ASAS partial response, and DCART 20 was $44,790, $89,156, and $54,057, respectively. The corresponding costs per responder for etanercept were $43,271, $116,500, and $58,250. The mean percent improvement in BASFI in the infliximab and placebo arms were 38.5% and 0.1% respectively, leading to a cost per percent BASFI improvement of $490. The corresponding numbers for etanercept were 30% and 2%, leading to a cost per percent BASFI improvement of $541. **CONCLUSIONS:** The cost-efficacy ratios of infliximab and etanercept maintenance therapies compared to placebo were similar. The cost-effectiveness in clinical practice will depend on the actual dose and effectiveness achieved. Incremental cost-effective comparisons cannot be reliably estimated without a head-to-head trial.

PAR12

HOW ADEQUATE DO RA-PATIENTS REPORT INDIRECT COSTS?—THE EXAMPLE OF A GERMAN COHORT

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OBJECTIVES: To render information on the accuracy of patient-reported indirect cost data. By comparing questionnaire-derived data to payer-derived data on a patient-by-patient basis disease related productivity losses in rheumatoid arthritis (RA) are being validated. **METHODS:** The assessment of indirect cost data was part of a clinical multicenter randomized RA-trial in Germany. For 234 RA-patients at working age (1987 ACR criteria, membership in the regional statutory health insurance plan, mean age 53 (±9) years, mean disease duration 8 (±7) years, 76% females) every three months corresponding indirect cost data were derived from (i) a health economic questionnaire for cost assessment in patients with RA and (ii) the payer's database (insurance and physicians' association) over a period of 18 months. Comparative statistical analyses were performed between patient reported and insurance claims data. **RESULTS:** The mean annual productivity losses due to sick leave amounted to 14 and 17 days per patient (questionnaire versus payer data), productivity losses due to work disability to 3 days (both); monetary valuation renders overall costs of 1240€ and 1590€, respectively. The difference of 17% in overall productivity losses is not significant. Comparison of productivity losses reveals a strong correlation of r = 0.83 in those due to sick leave and of kappa = 0.84 in those due to work disability between questionnaire and payer data. **CONCLUSIONS:** The comparison of questionnaire and payer data shows that RA-patients report their productivity losses adequately. Indirect cost assessment should therefore be included in further RA-trials and observational studies, even if payer-derived data is not available.

PAR13

COST-EFFECTIVENESS OF VALDECOXIB COMPARED TO DICLOFENAC IN PATIENTS WITH RHEUMATOID ARTHRITIS (RA) IN THE UK (UK) AND GERMANY

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OBJECTIVE: To compare the cost-effectiveness of valdecoxib 20 mg once daily (qd) and diclofenac 75 mg slow release (SR) twice daily (bid) in the treatment of RA based on prospectively collected data of Health Care resource utilization in a randomized controlled trial (RCT, study 062) over 6 months. The cost-effectiveness evaluations were calculated for the UK from a National Health Service payer perspective, and for Germany from a Sickness funds payer perspective. **METHODS:** Study 062 compared efficacy and safety of valdecoxib 20 mg qd (n = 246) with diclofenac 75 mg SR bid (n = 237) in adult patients with RA. The cost-effectiveness of valdecoxib and diclofenac was compared using country-specific unit costs for resource use (hospital days, medications, unscheduled procedures and health care visits) in the UK and Germany. The cost-effectiveness ratios were calculated for cost/averted gastroduodenal (GD) ulcer, cost/averted withdrawal due to treatment failure and/or adverse event, cost/averted gastrointestinal (GI) serious adverse event (SAE), and cost/avoided ulcer with GI SAE. **RESULTS:** The study showed comparable efficacy and a superior safety profile for valdecoxib, resulting in fewer GI adverse events and hospital days. The cost/averted GD ulcer in the UK was –£1104 and 386€ in Germany. The cost/averted withdrawal due to treatment failure and/or adverse event was –£1580 in the UK and 553€ in Germany. The cost/averted GI SAE was –£2709 in the UK and 947€ in Germany, and the cost/avoided ulcer with GI SAE was –£3522 in the UK and 1436€ in Germany. **CONCLUSIONS:** The superior safety profile of valdecoxib compared with diclofenac translates into lower total health care costs for patients treated with valdecoxib, and overall cost effectiveness in both countries.

PAR14

COSTS OF RA IN GERMANY ON A MICRO-COSTING LEVEL

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OBJECTIVES: To develop a systematic set of German cost data in RA based solely on valid health care payer's cost data sources on a patient—per—patient micro-costing level. **METHODS:** Retrospectively one-year cost data of 338 RA patients were generated and analyzed. The cost data were derived from a major statutory health insurance plan ("Allgemeine Ortskrankenkasse Niedersachsen") and the regional physicians' association ("Kassenärztliche Vereinigung Niedersachsen"). A matrix of cost domains in RA was applied to structure the analysis. Descriptive statistics were used to analyze the data. **RESULTS:** The total direct costs for the 338 patients during the one year period (3rd quarter 2000—2nd quarter 2001) were 3815€ per patient-year. RA-related direct costs were 2312€ per patient-year. Outpatient costs accounted for 73.7%, inpatient costs for 24.0%, and other disease-related costs for 2.3% of RA-related direct costs. Outpatients costs drivers were: RA-related medication (1019€ per patient-year), physician visits (323€ per patient-year), diagnostic and therapeutic procedures and tests (185€ per patient-year), and devices and aids (168€ per patient-year). Ninety-eight patients