analysis from a societal perspective with a 3 month time horizon. Direct medical costs (hospitalizations, drug therapies, specialist visits, diagnostics, and laboratory exams) were quantified using the National Health Service tariffs expressed in Euro 2005.

RESULTS: 220 patients were enrolled, 110 cases matched with 110 controls. The mean age was 66.0 years, 57.3% were male. The mean total cost per patient-month was Euro 380.4 compared to Euro 164.4 for cases and controls, respectively (P < 0.0001). On average, direct medical cost per patient-month was estimated at Euro 368.6 in cases and Euro 149.8 in controls (P < 0.0001). Hospitalizations accounted for the greatest proportion of Health care costs in both groups, followed by drug therapies (hospitalizations: 21.9% and 5.5%; drug therapies: 94.5% and 68.2% in cases and controls, respectively). The working ability reduction is higher in cases than in controls (P = 0.004).

CONCLUSION: The results of our analysis show that subjects with cerebrovascular disease aged 40 to 79 years are more costly than subjects without cerebrovascular diseases.

CV3
A COST-EFFECTIVENESS ANALYSIS OF CANDESARTAN IN THE TREATMENT OF CHRONIC HEART FAILURE
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OBJECTIVES: Clinical trials have shown that candesartan, an angiotensin II receptor antagonist, improves survival and reduces hospitalisation rates in patients with chronic heart failure (CHF) and a reduced left ventricular ejection fraction (LVEF ≤ 40%). This study assessed the cost-effectiveness of candesartan in the management of CHF in Belgium.

METHODS: Based on the outcomes (mortality, hospitalisation rate, cardiovascular events) reported in the CHARMS Programme (Candesartan in Heart failure Assessment of Reduction in Mortality and morbidity), a decision model was developed predicting the cost-effectiveness of candesartan compared to placebo added to current standard treatment (including diuretics, β-blockers, digoxin) of CHF. Two populations with a LVEF ≤ 40% were analysed: those who were intolerant of ACE-inhibitors (“alternative group”) and those who were simultaneously treated with ACE-inhibitors (“added group”). Direct costs from the health care payer’s perspective (2004) were applied. Effects were expressed as Life-Years gained (LYG). The time horizon of the model was 3.14 years, based on the follow up time in the CHARMS programme, but also takes into account that patients who survived the study period gain life years and incur extra costs afterwards. An annual discount of 3% was applied on costs and effects. The average cost per day of candesartan (based on the average daily dose taken from the CHARMS-programme) was €1.06 in the “alternative” and €1.08 in the “added group”.

RESULTS: The incremental cost-effectiveness ratio was €1,214/LYG [95%CI 810, 1,058], in the “alternative” and €2,310/LYG [95%CI €425–6,390] in the “added” group. Sensitivity analysis showed the robustness of the results. Monte Carlo analysis showed that, using a threshold of €20,000/LYG, candesartan was cost-effective in 93.4% of the population. The cost-effectiveness ratio was higher in cases than in controls (P < 0.0001). Hospitalizations accounted for the greatest proportion of Health care costs in both groups, followed by drug therapies (hospitalizations: 21.9% and 5.5%; drug therapies: 94.5% and 68.2% in cases and controls, respectively). The working ability reduction is higher in cases than in controls (P = 0.004).

CONCLUSION: The results of our analysis show that subjects with cerebrovascular disease aged 40 to 79 years are more costly than subjects without cerebrovascular diseases.

CV4
DISCRETE EVENT SIMULATION OF THE ECONOMIC CONSEQUENCES OF ADDING MANAGED VENTRICULAR PACING MODE (DDDR-MVP) TO A STANDARD DUAL CHAMBER PACEMAKER (DDDR) IN FRANCE
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OBJECTIVE: To estimate the long-term economic and health impact of managing bradycardia with DDDR-MVP instead of standard dual chamber pacing (DDDR) in France. DDDR-MVP can reduce the amount of ventricular pacing. This may be advantageous since previous studies have shown that more frequent pacing of the ventricle increases the risk for heart failure and atrial fibrillation.

METHODS: A discrete event simulation was developed to estimate effects over five years. Identical patient pairs were created, one received DDDR-MVP, the other DDDR. During the simulation, each patient may develop post-operative complications, pacemaker syndrome, heart failure, atrial fibrillation (which may become chronic and require anticoagulants), or have a stroke. The risk profiles depend on the patient’s characteristics, device type and cumulative ventricular pacing. The cumulative proportion of time receiving ventricular pacing is calculated from data collected during a randomized, single-blind crossover trial of these devices. Risk functions for the association of ventricular pacing with heart failure and atrial fibrillation were based on published data from the MOST trial. Life expectancy is assumed the same with either device. Costs obtained from hospitalization (re-operation, heart failure, stroke), and anticoagulation, are reported in 2004 € and discounted at 3%. Each analysis was based on 100 replications. Sensitivity analyses covered all inputs and assumptions.

RESULTS: Within 5 years, 29.1% of the patients in each cohort died. Discounted costs over 5 years were about €13,000 per patient; despite the higher initial cost of DDDR-MVP mean additional cost was only €274 per patient. DDDR-MVP is predicted to increase QALY by a mean 0.05 years, yielding a mean cost-effectiveness ratio of €5,360/QALY. Sensitivity analyses showed the results were consistent over a wide range of values.

CONCLUSION: Based on these 5-year estimates, the additional health benefits of MVP provide very attractive value for patients with sinoatrial-node disease or intermittent atrioventricular block.

Utility Based Patient Reported Outcomes

UB1
MAPPING FROM DISEASE SPECIFIC MEASURES TO UTILITY: ALGORITHMS FOR ESTIMATING EQ-5D AND SF-6D VALUES FROM THE INFLAMMATORY BOWEL DISEASE QUESTIONNAIRE IN PATIENTS WITH CROHN'S DISEASE
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OBJECTIVES: To examine the relationship between the Inflammatory Bowel Disease questionnaire (IBDQ) total score and measures of utility (EQ-5D and the SF-6D scores), and to estimate algorithms to map the two utility values from IBDQ scores.

METHODS: A large dataset, from ENACT I and II multinational, randomized, placebo controlled clinical trials in moderate to severe Crohn’s disease, provided contemporaneous patient responses to all three questionnaires. Paired observations from multiple time-points for patients from both trials were combined in the analysis. The mean utility scores by IBDQ score deciles were estimated. Spearman correlation coefficients were calcu-
labeled for paired observations between IBDQ and EQ-5D (n = 3320) and IBDQ and SF-6D (n = 3230). Least square regression models were investigated. RESULTS: The decile analysis demonstrated a consistent positive relationship with both utility scores. The correlations between the IBDQ and both the EQ-5D and SF-6D were statistically highly significant (p < 0.0001). The correlation coefficients for IBDQ with SF-6D and with EQ-5D were 0.85 and 0.76 respectively. A simple linear least square regression model of the relationship between EQ-5D and IBDQ explained 46% of the variance. A visual inspection of the residuals plot for the IBDQ/SF-6D model suggested some non-linearity and an improved non-linear model explained 72% of the variance. The comparison of the two sets of values demonstrated the commonly observed ceiling effect for the EQ-5D and floor effect for the SF-6D and provided added face validity for the transformations. CONCLUSIONS: Given the strength, consistency, and predictable characteristics of the relationships, the algorithms appear to provide valuable and valid methods to estimate utilities from IBDQ scores in trials of Crohn’s disease patients that have collected IBDQ scores but not utilities. The generalisability of this relationship to other groups of patients, for which the IBDQ is appropriate, should be investigated.

UB2
QUANTIFYING THE RELATIONSHIP BETWEEN DISEASE SEVERITY, UTILITY AND HEALTH CARE RESOURCE USE IN CROHN’S DISEASE
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OBJECTIVES: To assess the relationship between (i) disease severity and quality of life and (ii) disease severity and health care resource use, in patients with Crohn’s disease. METHODS: A prospective, cross sectional, pharmacoeconomics study was conducted in five centres in Australia, with patients recruited by specialist gastroenterologists. Each patient completed questionnaires comprising demographic, disease and health care utilisation questions, together with the disease-specific Inflammatory Bowel Disease Questionnaire (IBDQ) and the Assessment of Quality of Life (AQoL) multi-attribute utility instrument. Disease severity was assessed by the gastroenterologist, using the Crohn’s Disease Activity Index (CDAI). RESULTS: Of the 154 patients recruited, 11 were excluded due to incomplete datasets or significant co-morbidity. The 143 patients analysed had a broad range of disease severity (CDAI 36-446), and included 23% with enterocutaneous fistulae. Stepwise regression analyses showed a negative relationship between disease severity and quality of life—irrespective of whether the latter was measured by the IBDQ (p < 0.0001) or the AQoL utility instrument (p < 0.0001). Age, gender and years since diagnosis did not significantly impact upon either of the quality of life outcomes. Health care resource utilisation increased with increasing CDAI (p < 0.001), with hospital admissions being the largest component cost. Even when patients with fistulae were excluded, the mean treatment cost for the most severe group (CDAI ≥ 220) was AUD$7852 annually, excluding medications. Finally, despite their young age (mean = 38 yrs), 27% of patients received a Government benefit; with the majority of these stating that this was primarily due to their Crohn’s disease. CONCLUSIONS: More severe Crohn’s disease is associated with poor quality of life for patients and places considerable burden upon health care and social welfare resources.

UB3
A COMPARISON OF THE EQ-5D AND THE SF-6D IN PATIENTS WITH PULMONARY ARTERIAL HYPERTENSION
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OBJECTIVES: To compare 2 preference-based measures of health, the EQ-5D and the SF-6D, in patients with pulmonary arterial hypertension (PAH). METHODS: PAH patients (n = 278) were administered the EQ-5D and SF-36 questionnaires in a sildenafl clinical study. Comparisons of the utility indices of the EQ-5D and the SF-6D (the SF-6D) were conducted using the study baseline data. Comparisons were made using the total group of patients, and a sub-group analysis by functional class was also conducted. Functional class was assessed using the WHO criteria for functional capacity and therapeutic class in patients with PAH; there are 4 WHO functional classes (FC I-V), with higher classes associated with greater limitations in physical activity. RESULTS: In the total group of patients, the mean (SD) utility index scores of the EQ-5D and the SF-6D were similar (0.632 [0.254] vs. 0.627 [0.116]), and the single-measure intra-class correlation coefficient between them was 0.51. Baseline FC for treated patients was distributed as follows: FC I, 0.4%; FC II, 38.6%; FC III, 57.6%; FC IV, 3.2%. Given the low proportions of subjects in FC I and FC IV, analyses were performed on the combined groups of FC I/II and FC III/IV. The mean (SD) utility index score of the EQ-5D exceeded the SF-6D score in FC I/II patients (0.720 [0.205] vs. 0.672 [0.122]), but was lower than the SF-6D score in FC III/IV patients (0.574 [0.266] vs. 0.597 [0.102]). CONCLUSIONS: The EQ-5D and the SF-36 utility indices provide similar estimates for PAH patients overall. However, the agreement between the instruments is not consistent over the range of functional classes seen in PAH patients.

UB4
DETERMINANTS OF HEALTH STATE UTILITY IN PATIENTS WITH PSORIATIC ARTHRITIS
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OBJECTIVES: Currently, there is only limited research into the main determinants of QoL in patients with psoriatic arthritis (PsA). With a number of novel treatments for PsA emerging, we examined the associations between clinical outcomes and health utilities for the purposes of economic evaluation. METHODS: Patient-level data from a pivotal, Phase III, randomized controlled trial of the fully human, anti-tumor necrosis factor monoclonal antibody, adalimumab, vs. placebo in the treatment of PsA were analyzed. All potentially relevant outcomes were included: patient-reported functional loss measured by the Health Assessment Questionnaire Disability Index (HAQ-DI), physician’s assessment of psoriasis severity from the Psoriasis Area Severity Index (PASI), tender and swollen joint counts (TJC, SJC), age, sex, and disease duration. All measurements were collected for patients at baseline and Weeks 12 and 24. The health utility measurement, the SF-6D was derived from responses to the Short Form-36, a generic QoL questionnaire. Multiple linear regressions using generalized estimating equations were employed to identify significant predictors of the SF-6D.

RESULTS: Mean baseline characteristics for 313 patients...