ISPOR Twelfth Annual International Meeting Contributed Presentation Abstracts

Contributed Podium Presentations

PODIUM SESSION I: ARTHRITIS

AR1

COST-EFFECTIVENESS OF ETANERCEPT AND INFLIXIMAB IN THE REAL-WORLD SETTING—AN ESTIMATE BASED ON PUBLISHED GERMAN DATA ON RESPONSE AND ADHERENCE

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OBJECTIVES: Anti-TNF-α drugs (Biologics) have become a cornerstone in the treatment of Rheumatoid Arthritis (RA). Since initial choice of agents is sometimes driven by expected treatment costs and related cost-effectiveness, we assessed the cost-effectiveness of Etanercept (ETA) and Infliximab (INF) based on published real-world data from the German Biologics Registry. **METHODS:** We designed an excel-based cost-effectiveness model and calculated the costs per LUNDEX responder month. The LUNDEX score developed by Kristensen et al. (2006) is combining the proportion of patients fulfilling a selected response criterion (e.g. ACR 20) with the proportion of patients adhering to a therapy. Our model compares the costs per LUNDEX-response over six months for the treatment with ETA and INF from a payer-perspective and calculates the cost per LUNDEX responder month. ACR 20 response rates (INF = 46%; ETA = 58%), adherence to therapy (INF = 77%, ETA = 82%) and real-world dosing data (INF = 4 mg/kg body weight, ETA = 47.5 mg/week) were derived from published registry data. Drug costs were calculated based on list prices. Administration and lab costs were derived from official databases. **RESULTS:** During the first six months, treatment with INF or ETA causes costs of EUR 10.873 € and EUR 9.683 €, respectively. The LUNDEX index at six months is 0.357 for INF and 0.477 for ETA. Accordingly, the costs per LUNDEX response are 30.277 € for INF and 20.167 € for ETA. The average cost per LUNDEX-responder month in Germany is €5.033 for INF and € 3.362 for ETA during the first six months of treatment. **CONCLUSION:** ETA is more cost-effective than INF in a real-world setting in Germany. Our cost-effectiveness analysis supports decision making based on a combined measure of response and therapy adherence. Long-term data on both response and adherence are needed to further assess real-world cost-effectiveness of Biologics.

AR2

THE ASSOCIATION BETWEEN CO-EXISTING IMMUNE MEDIATED INFLAMMATORY DISEASES (IMID) AND HEALTH CARE COSTS IN PATIENTS WITH RHEUMATOID ARTHRITIS (RA) WHO RECEIVED ANTI-TUMOR NECROSIS FACTORS (ANTI-TNFS)

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OBJECTIVES: To evaluate the impact of co-existing IMIDs on health care costs in RA patients. **METHODS:** A retrospective study utilizing administrative claims data from Blue Cross Blue Shield health plans was conducted. Patients initiating anti-TNF (infliximab, etanercept, or adalimumab) therapy between January 1, 2003 and June 30, 2005, were required to have >6 months of continuous eligibility prior to and >12 months following their index date. Two mutually exclusive groups were developed based on the number of IMIDs (RA, psoriatic arthritis, ankylosing spondylitis, psoriasis, Crohn's disease, or ulcerative colitis) diagnoses: RA and RA plus >1 other IMID (RA + IMID). The Charlson-Deyo Comorbidity Index (CDCI) was used to control for overall illness burden. IMID-attributable and all-cause health care costs were compared between two groups. **RESULTS:** Of the 2409 patients, 1654 (68.7%) were diagnosed with RA and 755 (31.3%) with RA + IMID. Over two-thirds of the patients were female (70.5%) and the mean (SD) age was 48 + 10 years. Although the RA group had a higher pre-period CDCI score (1.12 versus 0.71, $p < 0.0001$), during the 12-month post period, it had lower IMID-attributable costs ($15,146.83 versus $16,162.44; p = 0.5567), and all-cause health care costs ($21,412.68 versus $22,419.36; p = 0.2769) compared to the RA + IMID group. After adjusting for confounding variables (age, gender, and CDCI score) via multivariate analysis, there were significant differences ($p < 0.05$) between the IMID-attributable and all-cause costs of the groups. Also, compared to the RA + IMID group, the RA group had lower costs in each health service category: inpatient admissions, outpatient services, physician visits, emergency room visits, and pharmacy costs. **CONCLUSION:** This study indicates that co-existing IMIDs increase health care costs in patients with RA. Anti-TNF therapy may be more cost-effective in the treatment of patients with more than one IMID. Additional analyses are needed to examine the effectiveness of anti-TNF therapies in patients with more than one IMID.

AR3

CAUSES AND EFFECTS OF SCENARIO REJECTION: STATED PREFERENCES FOR RHEUMATOID ARTHRITIS TREATMENTS

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OBJECTIVES: The purpose of this study is to quantify the correlates and consequences of scenario rejection in a study of stated preferences for rheumatoid arthritis (RA) treatments. **METHODS:** An on-line panel of RA patients completed a stated-choice survey. that required respondents to choose among ten pairs of treatment alternatives with different treatment features and a current-treatment alternative. Subjects who refuse to correctly complete the tradeoff tasks in a stated-preference survey may reject the hypothetical-treatment scenarios in 3 ways: refuse to answer any of the trade-off questions, answer all the ques-

tions based on a single treatment feature such as cost, or select the current-treatment alternative in all questions. We used probit models to identify the chracteristics of subjects who are more likely to reject scenarios and controlled for scenario rejection in estimating preference models. **RESULTS:** 463 respondents completed the survey. 12.4% of respondents did not answer the trade-off questions, 40.6% dominated on price, and 51.3% chose their current treatment in all trade-off questions. Respondents were less likely to reject scenarios if they had higher incomes (p < 0.000), more education (p < 0.000), were recently diagnosed with RA (p = 0.006), and if the cost of their current treatment was high (p < 0.000). Respondents who currently use an oral medication are less likely and respondents who currently use an injected or infused treatment are more likely to always pick current treatment. Controlling for price-dominant subjects increases willingness to pay for the "chance that the medicine works well 100% of the time" from $217 ($166–$268) to $471 ($396–$545) per month. **CONCLUSION:** Scenario rejection is a form of selection bias. Rejectors provide no trade-off information for estimating treatment preferences. Rejection is correlated with several observable variables, which makes it possible to control for potential bias in preference estimation. Controlling for price-dominant subjects can have a large impact on WTP estimates.

METHODS FOR MEASURING DOSE ESCALATION IN TNF ANTAGONISTS FOR RHEUMATOID ARTHRITIS PATIENTS TREATED IN ROUTINE CLINICAL PRACTICE

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OBJECTIVES: To identify the most reliable approach for measuring dose escalation by comparing results from different methods that may affect clinical and drug utilization decisions. **METHODS:** Five methods of quantifying dose escalation were explored which compared: 1) weekly dose of last to first prescription; 2) average weekly dose of all prescriptions to standard dose; 3) weekly dose of subsequent prescriptions to first prescription and 3a) defining dose escalation as °Ý2 instances of dose increase; 3b) defining dose escalation by proportional dose increase (15%, 30%, or 50%); and 3c) calculating dose escalation as percent of patient-weeks. The example is based on claims data from 2002 to 2004, using RA patients newly initiated anti-TNFα (Enbrel or Humira) treatment with one year follow-up. Separate analyses were conducted for patients started on standard and high doses. **RESULTS:** For those who started on standard dose, dose escalation by method 1 and 2 was 6.2% and 8.4% for Enbrel patients (n = 1339) and, 13.7% and 26.6% for Humira patients (n = 417). Dose escalation by method 3a was 8.1% for Enbrel and 18.9% for Humira. Dose escalation by method 3b (with threshold of 15%, 30%, and 50%) ranged from 5.6% to 7.7% for Enbrel and 16.1% to 18.5% for Humira, respectively. Percent patient-time approach of 3c provides weekly incidences of dose escalation and exhibits a divergent pattern of dose escalation between the treatment groups over time, which diverges at about the 12th week of treatment. Dose escalation was uncommon in patients started with high dose. **CONCLUSION:** Estimate of dose escalation is method dependent. Simple approaches such as comparing last and first prescription were unable to capture the full extent of dose escalation. Use of multiple methods, such as method 3 and method 2 are recommended as the latter will also address dosing for patients initiated with high doses.

PODIUM SESSION I: CARDIOVASCULAR STUDIES

IMPACT OF A TARGETED PATIENT COMMUNICATION ENCOURAGING GREATER GENERIC STATIN USE

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OBJECTIVES: Evaluate a patient Formulary Notification Program (FNP) designed to encourage use of lower cost, clinically equivalent generic alternatives among non-formulary atorvastatin users. **METHODS:** This was a cross-sectional, case-control study conducted in a commercially insured population, targeting current atorvastatin users (date of last fill + days supply within 30 days of targeting). The case group received one of two letter-based Patient Communications (PCs) depending on channel of most current prescription fill (target prescription). The PCs informed patients of lower cost, clinically equivalent generic alternatives. Patients in retail pharmacies (n = 27,449) received information on copayment savings from generic use in retail. Patients in Home Delivery (HD) (n = 25,274) received information on savings from filling generic alternatives in HD. The PCs were mailed in July 2006 soon after availability of generic simvastatin. The control group consisted of current atorvastatin users (at time of case group targeting) who were not enrolled in a client that implemented the FNP. Control group members were matched to case group based on distribution channel [retail (n = 3186)/HD (n = 1012)] of target prescription. Prescription claims were examined through October 2006 for the outcome of switching to generic statin. Bivariate and logistic regression analyses were used to assess research objective. **RESULTS:** In retail, 11.9% of cases switched to generic statin compared to 4.8% in control group (p < 0.001). In HD, 20.6% of cases switched to generic statin compared to 8.1% in control group (p < 0.001). Controlling for demographic and plan design, patients who received PCs in retail had 64% greater odds (95%CI: 1.48–1.81) of filling generics relative to controls. Patients receiving PCs in HD had 81% greater odds (95%CI: 1.60–2.05) of filling generics in HD compared to respective controls. **CONCLUSION:** Informing patients of copayment savings from generic alternatives soon after patent expiration of a popular branded statin, is an effective strategy to encourage greater generic statin use.

MEDICATION REFILL PERSISTENCE: DOES PRESCRIPTION COST-SHARING MATTER?

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OBJECTIVES: To investigate and to quantify the influence prescription cost-sharing has on medication refill persistence by using two antihypertensive therapeutic classes: ACEs (angiotensin converting enzyme inhibitors) and ARBs (angiotensin II receptor blockers). **METHODS:** This is an observational cohort study utilizing a commercial insurer's integrated medical and pharmacy claims database supplemented with public files. Members were new users of ACE and ARB single agents between January 1 and June 30, 2004. Medication refill persistence was measured three ways: total number of days without medication; proportion of days covered (PDC) with a cutoff point of 80%; and number of days to the first gap of more