67.6% were male. Based upon the questionnaire, 36.1% of patients reported nonadherence. Lower adherence rate (49.1%) was obtained when comparing medications prescribed at discharge to medications documented at follow-up. Based on the questionnaire, the more medication prescribed, the greater the adherence ($p = 0.02$). Trend tests of adherence over increasing number of medications were positive in all medication classes (beta-blockers, ACE inhibitors, anticoagulants, and lipid lowering drugs). Multivariate models show the similar trend when adjusted for age and gender. Adherence also increased with more documented comorbidities ($p = 0.01$). When comparing medications prescribed to medications at follow-up there were no significant predictors of adherence.

CONCLUSIONS: Nonadherence is frequent in patients after an MI (36%). Utilizing a medication adherence questionnaire to assess adherence is better than merely comparing medication lists at two different points in time. Better adherence to all four evidence-based therapies after an MI is seen in patients prescribed more medications and with more disease states. Higher adherence may be related to a recent major health event, more recent education on treatment benefits, and/or to a focus on rehabilitation. This study demonstrates the need for a larger, broader study that includes health beliefs, psychosocial assessment, and other patient factors that may influence compliance.

ARTHRITIS & OSTEOPOROSIS—*Clinical Outcomes Presentation*

PA01

CARDIORENAL EFFECTS AND COSTS OF COX-2 INHIBITORS IN A MANAGED CARE ORGANIZATION

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Arthritis—rheumatoid and osteoarthritis—is one of the most prevalent chronic conditions affecting nearly 50% of persons over the age of 65.

OBJECTIVES: The objective of this study was to compare cardiorenal events and costs between two COX-2 inhibitors—celecoxib and rofecoxib.

METHODS: This was a retrospective analysis of medical and pharmacy claims. All patients newly started on a COX-2 inhibitor during 7/1/99 to 6/30/00 were identified and followed for 6 months before and after the initial COX-2 prescription. Incident cardiorenal events were attributable to a COX-2 if there was an ICD-9 diagnosis code within 45 days after the last days supply of the prescription.

RESULTS: A total of 20,514 patients were newly prescribed celecoxib ($n = 12,487$) or rofecoxib ($n = 8,027$). Mean age was 65 (+/–15) and 68% were female. Primary indication for COX-2 was pain (55%), followed by osteoarthritis (23%), other arthritis (17%), and rheumatoid arthritis (6%). There were no significant differences in baseline cardiorenal history and medication use (antiarthritic, antihypertensive, and GI-related) between the two cohorts. Among the baseline hypertensive patients, those on rofecoxib were 34% more likely to experience an incident cardiorenal event than patients on celecoxib, adjusting for age, gender, comorbidity, indication and dosage (OR = 1.34; $p = 0.007$). Results were similar for the baseline non-hypertensive patients, with those on rofecoxib reporting a higher risk of new cardiorenal events (OR = 1.18; $p = 0.0009$). Although not statistically significant, patients on rofecoxib incurred slightly higher total health care costs than those on celecoxib ($8,188 vs. $7,540; $p = 0.0867$).

CONCLUSION: The risk of cardiorenal events was significantly higher in rofecoxib-treated patients than celecoxib-treated patients. There were no statistically significant differences in total costs between the two COX-2 inhibitors, although celecoxib-treated patients incurred slightly lower total health care costs.

PA02

TREATMENT PATTERNS OF CARE AND THE RISK OF SUBSEQUENT FRACTURES AMONG OSTEOPOROTIC WOMEN WITH INCIDENT FRACTURES

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Osteoporosis affects 4–6 million women in the USA.

OBJECTIVES: The objective of this study was two-fold: 1) to evaluate treatment patterns of care associated with an incident fracture in postmenopausal women in a managed care organization and 2) to estimate the incidence of subsequent fractures by age.

METHODS: This was a retrospective analysis of medical and pharmacy claims. Women aged 55 or older, with a primary or secondary diagnosis of a new bone fracture during calendar year 1999, and continuously enrolled in the health plan were included in the sample. All claims 12-months before and 15-months after index fracture date were evaluated for medication use and subsequent fractures.

RESULTS: A total of 19,720 women had incident bone fractures. Mean age was 78 years (+/–9.4). Of these 19,720 women, 90% had nonvertebral fractures, mainly hip and wrist, and 10% had vertebral fractures. Overall use of osteoporosis therapy, anytime before and after index fracture, was 24% and 29%, respectively. Of the women receiving therapy after fracture, 65% were prescribed estrogen, 28% bisphosphonates, 17% nasal calcitonin, 14% combination therapy, primarily a bisphosphonate plus estrogen, and 5% raloxifene. Only 25% of treated women remained on therapy for at least

12 months. The chi-square test for trend revealed a significant trend for a decreasing rate of treatment with increasing age ($p < 0.0001$). During the follow-up period, 34% of women had subsequent fractures. Furthermore, there was a significant risk of subsequent fractures with increasing age ($p < 0.0001$).
CONCLUSION: Evidence from the published literature show that the risk of fracture increases with age, particularly among those with prior fracture events. In this study, only one-fourth of the study women received osteoporotic therapy after an incident bone fracture. Given the magnitude of the financial, physical, and psychosocial consequences of osteoporotic fractures, more attention should be given to the treatment of osteoporosis.

ARTHRITIS & OSTEOPOROSIS—*Economic Outcomes Presentations*

PA03

MODELLED COST-UTILITY ANALYSIS OF ROFECOXIB AND TRADITIONAL NON-STEROIDAL THERAPIES FOR TREATMENT OF CHRONIC OSTEOARTHRITIS

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OBJECTIVES: To provide a comprehensive assessment of the cost-effectiveness of rofecoxib relative to diclofenac therapy, the main NSAID used in Australia. The evaluation employs cost-utility and cost-effectiveness analysis from a health system perspective with the endpoints being the incremental cost per quality adjusted life year (QALY) gained and incremental cost per life year saved (LYS).
METHODS: A Markov process was used to advance patients through seven health states in daily cycles over a period of one year. The modelled population is based on typical osteoarthritis patients in Australia (approximately 71% women, mean age: 63 years). Clinical data on the incidence of gastrointestinal adverse events (Perforations/ ulcers/ bleeds or other gastrointestinal adverse events) were derived by systematic review and meta-analysis of randomised trials. Utility values were obtained using the EQ-5D and a survey of health professionals. Resource use and valuation included drug costs and the costs associated with the treatment of gastrointestinal adverse events. Univariate and multivariate sensitivity analysis was undertaken.
RESULTS: In a mixed population of patients with osteoarthritis, the incremental cost per QALY associated with rofecoxib compared to diclofenac is $A18,691. Simply focusing on mortality, the cost per death avoided amounts to $A67,092. Assuming that 13.2 discounted life years would have been saved per death avoided (life expectancy of typical osteoarthritis patient). The associated cost per LYS could be as low as $A5,097. Sensitivity analyses indicated that rofecoxib offers favourable cost-effectiveness according to Australian National Health and Medical Research Council (NHMRC) guidelines. The maximum incremental cost per QALY generated when key assumptions were altered in sensitivity analysis was always less than $A70,000.
CONCLUSIONS: The incremental QALY and LYS outcomes derived from the modelled evaluation are well within the bounds considered cost effective by Australian guidelines. Improved quality of life make rofecoxib a cost effective alternative for patients with osteoarthritis.

PA04

COST ANALYSIS OF A 12-WEEK CYCLE OF THERAPY WITH CELECOXIB VS. CONVENTIONAL NSAIDS IN PATIENTS WITH OSTEOARTHRITIS

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Osteoarthritis (OA) has an high prevalence rate in Italy. Traditional NSAIDs, the commonest symptomatic OA treatment, cause gastrointestinal (GI) side effects, varying from milder symptoms of GI intolerance to life-threatening GI perforation obstruction and bleeding (POB). Celecoxib has demonstrated a much better GI safety profile than NSAIDs, but it is more expensive.
OBJECTIVES: To estimate the cost from the Italian national health service (INHS) perspective of a 12-week cycle of therapy in OA patients with celecoxib or NSAIDs.
METHODS: A decision-tree was used to estimate over 12 weeks the costs of two alternative therapies: celecoxib 200 mg/day (€1.38/day) and NSAIDs (€0.41/day) whose cost was calculated as the mean of the first ten prescribed NSAIDs in Italy in year 2000, at the mean dosage. The time frame was chosen as the most representative of the Italian physicians prescription habits. Probabilities of side effects, derived from clinical trials, were: Celecoxib, GI intolerance 0.078, Anemia 0.0015, Ulcer 0.0085, POB 0.001; NSAIDs, GI intolerance 0.12, Anemia 0.0055, Ulcer 0.0315, POB 0.008. Probabilities of hospitalization, derived from Italian literature, were: GI intolerance, 0; Anemia, 0.2, Ulcer 0.3, POB, 1. Cost to treat the events were estimated using the INHS tariffs and DRGs and were: GI intolerance, €138; Anemia without hospitalization, €432; anemia with hospitalization, €3,908; Ulcer without hospitalization, €491, Ulcer with hospitalization, €2,530; POB, €10,809.34.
RESULTS: The costs of the alternative therapies were €148.56 for celecoxib 200 mg/day and €178.41 for NSAIDs.
CONCLUSIONS: Celecoxib is more expensive than the commonest prescribed NSAIDs in Italy; nevertheless, NSAIDs GI side effect have high prevalence and resource consumption, included a high rate of hospitalization, and a related considerable cost load for INHS. Therefore, the correct prescription of celecoxib may result in global cost-savings for the payer.