ASSOCIATION OF MEDICATION PERSISTENCY WITH ROUTE OF ADMINISTRATION AND PATIENT COST-SHARING: ANALYSIS OF COMMONLY USED BIOLOGICS

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Methods

This was a retrospective, observational, cross-sectional study using a proprietary administrative claims database for ≥30 U.S. commercial health plans (9.2 million members) (Artemetrex, Brentwood, TN, USA).

Patients

Inclusion criteria

• commercially insured
• age ≥18 years
• 1 claim for an anti-inflammatory biologic in 2012 or 2013
• continuous enrollment from the date of the index claim (first claim for an anti-inflammatory biologic in the database) through 15 months post-index claim

New patient subgroup

• at least 6 months of continuous enrollment prior to the index claim
• no claims for an anti-inflammatory biologic in the 6 months prior to the index claim

Anti-Inflammatory Biologics

• tocilizumab (Actemra®)
• adalimumab (Humira®)
• certolizumab pegol (Cimzip®)
• infliximab (Remicade®)
• etanercept (Enbrel®)

Outcome Measures

12-Month Persistency

Persistency was defined as a treatment length of at least 365 days after the index claim without a therapy gap or switch in therapy.

• A therapy gap was defined as a gap ≥28 days after the drug depletion date with no claim for the same drug.

• Depletions for pharmacy claims were defined as claim fill date plus days supply. Depletions for medical claims were based on diagnosis-specific, U.S. Food and Drug Administration (FDA)-approved dosing schedules.

• For infliximab, it was assumed that each medical claim was for a 60-day supply.

We determined the percentage of patients with 12-month persistency for individual drugs and all comorbidities. We also calculated persistency rates by age, number of comorbidities, incident pain, route of administration, and cost-sharing amount and new patient status. Patient’s choice was used in the bivariate analyses to determine the association between cost-sharing variables.

Definitions

Index claim: The patient’s first claim for an anti-inflammatory biologic in the study database.

Subtreatment: Crichton’s disease/erosive colitis, psoriatic arthritis, or rheumatoid arthritis. The indication was considered present if a single claim with a related CPT-4 code was recorded from 90 days prior to 365 days after the initial dispensing.

Comorbidities: Chronic respiratory disease, diabetes mellitus, dyslipidemia, hypertension, ischemic heart disease and myocardial infarction, osteoporosis, renal failure, and cancer.

Incident pain: A new pain diagnosis on the 12 months after the index claim.

Route of administration: Subcutaneously administered drugs included adalimumab, certolizumab pegol, etanercept, and tocilizumab; intravenously administered drugs included infliximab and subcutaneous adalimumab.

Plan cost-sharing amounts: The average out-of-pocket cost-sharing amount for all claims in the therapeutic class. Cost-sharing amounts were inclusive of deductibles, coinsurance, and copayments.

Results

Patients

• 15,834 patients met study criteria (all patients’ group)
• 1,748 patients were new to therapy (“new patient” subgroup)

Outcomes

• Twelve-month persistency rates were 70.3% among all patients and 51.5% among new patients.

• Persistency was highest for infliximab (62.3%), followed by adalimumab (65.1%), certolizumab pegol (65.5%), etanercept (65.1%), and tocilizumab (65.6%) (P < 0.01).

• Higher 12-month persistency was observed for drugs administered intravenously versus subcutaneously (81.2% vs. 65.6%, P < 0.01).

• Persistency was higher in patients with Crichton’s disease/erosive colitis than in patients with rheumatoid arthritis or psoriatic conditions (75.0% vs. 67.2% and 61.3%, respectively, P < 0.01).

• Persistency was higher in patients with no comorbidities than in those with 1 or 2 (22–24). Patients with ≥3 comorbidities had persistency rates of 68.8%, 68.6%, and 65.9% (P = 0.01).

• Persistency was higher in patients with Crohn’s disease/ulcerative colitis than in patients with rheumatoid arthritis or psoriatic conditions (75.0% vs. 67.2% and 61.3%, respectively, P < 0.01).

A multivariate analysis was also conducted, controlling for diagnosis, comorbidity, incident pain, incident event, new patient, and cost-sharing amount. Results were consistent with the bivariate findings. That analysis will be presented elsewhere.

Discussion

• In this analysis of treatment adherence to five anti-inflammatory biologics, 12-month persistency was highest in patients with Crohn’s disease/ulcerative colitis compared to other comorbidities.

• Persistency was higher for drugs administered intravenously rather than subcutaneously, which suggests that administration in the medical setting (as opposed to self-administration by the patient) may have a beneficial effect on adherence. This may be an important consideration for benefit design and patient incentives for use of pharmacy versus medical benefits.

• Persistency was lower in patients with comorbidities. This is not unexpected, as comorbidities add to the complexity of a patient’s treatment regimen and may contribute to adherence lapses, frustrations, and giving up on therapy. Persistency was lower in these new to therapy. This finding is consistent with previous research.3

• Although the relationship between persistency and cost-sharing was not linear, cost-sharing amounts ≤$300 were associated with lowest persistency. The pattern is consistent with a prior study of specialty drug adherence in new patients.4

In this study, patient cost-sharing amounts were associated with lower rates of medication persistence. Specialty medicines are typically priced at higher cost than in benefit designs. When undertaking efforts to improve persistence adherence to therapy with anti-inflammatory biologics, patient and plan benefit characteristics should be considered.

References


3. Bowen KL, Gleason PP. Time to discontinuation of newly initiated biologic therapy for adult Crohn’s disease (infliximab vs adalimumab) and rheumatoid arthritis (infliximab vs adalimumab or etanercept). Poster presented at: Academy of Managed Care Pharmacy 25th Annual Meeting; April 3-5, 2013; San Diego, CA.