Treatment Patterns and Health Care Costs for Patients With Psoriatic Arthritis on Biologic Therapy: A Retrospective Cohort Study

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ABSTRACT

Background: Biologic therapies have been used in patients with psoriatic arthritis (PsA) who have been inadequately treated with conventional disease-modifying anti-rheumatic drugs (DMARDs).

Objective: Examine treatment patterns and health care costs among patients with PsAs who initiated biologic therapy either as monotherapy or adjunctively with traditional DMARDs.

Methods: The MarketScan® database was used to identify adults with PsA who initiated therapy with a biologic (with first use identified as index date). Patients were required to have a 6-month pre-period with no biologic use and 1 year insurance eligibility pre- and post-index date. Cohorts of patients initiating biologic therapy either as monotherapy or adjunctively with traditional DMARDs were created. Medication use patterns including discontinuation, switching, and restarting were identified during the 1-year follow-up period. Cox proportional hazards models were conducted to compare time to discontinuation of index biologic, and logistic models were used to compare the rate of discontinuation and biologic switching between the 2 cohorts. All-cause and PsA-related costs were compared between the 2 cohorts using propensity score-adjusted bootstrapping methods. All comparisons were made after adjusting for age, sex, Charlson comorbidity index, and PsA-related total cost over 1-year pre-index date.

Results: Among the 3164 PsA patients identified, 67.7% initiated biologics as monotherapy and 32.3% initiated biologics adjunctively with traditional DMARDs. The number of patients on pain medications, topical medications, and traditional DMARDs was significantly lower post index date compared to pre-index date ($P < 0.01$), while use of antihypertensives, antidiabetics, and statins increased after patients initiated biologic therapy. In 1-year post-period, approximately half of the patients (50.9%) who initiated a biologic continued their index biologic with an average time to discontinuation of 279.8 days for all patients. Rates of discontinuation, switching, and restart were 33.1%, 9.9%, and 6.1%, respectively, for all patients. Rates of switching and restart were similar between the 2 cohorts, but a significantly lower rate of discontinuation was observed in the biologic plus traditional DMARDs cohort than the biologic monotherapy cohort. Pharmacy expenditures were higher for the biologic + DMARD cohort than the biologic-monotherapy cohort ($14,486 vs $14,062; $P = 0.0348$). No statistically significant differences for either all-cause or PsA-specific costs were observed across the treatment cohorts.

Conclusions: Traditional DMARDs used in combination with biologic therapy appear to reduce rates of biologic therapy discontinuation. (*Clin Ther*. 2013;35:1376–1385)

Key words: biologics, disease modifying anti-rheumatic drugs, medical expenditures, psoriatic arthritis, treatment patterns.

INTRODUCTION

Psoriatic arthritis (PsA) is an autoimmune disorder affecting the skin and joints. The disease may be chronic and disabling, and patients may experience

Accepted for publication July 11, 2013.
http://dx.doi.org/10.1016/j.clinthera.2013.07.328
0149-2918/$ - see front matter

osteolysis with destruction of the joint cartilages and bony surfaces, leading to deformity.[1] In ~85% of patients, psoriasis generally begins before joint problems develop, and the onset of PsA usually occurs between 30 and 50 years of age.[1] The estimated prevalence of PsA in the United States is 0.25% based on a survey of 27,200 adults.[2] Medical comorbidities such as hypertension, cardiovascular disease, obesity, depression/anxiety, and infections are relatively common in psoriasis and PsA.[3,4] Furthermore, relative to psoriasis alone, PsA patients are more likely to experience hypertension, infections, neurologic conditions, gastrointestinal disorders, and liver disease.[5] Both psoriasis and PsA have been associated with decrements in quality of life (QoL), but patients with PsA have poorer QoL outcomes than do those with psoriasis alone.[6] The cost of illness and out-of-pocket expenses for psoriasis and PsA can be substantial,[7–9] with total direct and indirect costs of these illnesses in the United States estimated at US $11 billion.[7,10]

Mild to moderate cases of PsA have historically been treated with NSAIDs, conventional disease-modifying antirheumatic drugs (DMARDs), or intra-articular corticosteroid injections.[11,12] Although the evidence base is not well established, the efficacy and safety profiles of NSAIDs and the conventional DMARDs appear acceptable, and these treatments may offer symptom relief.[12,13] The use of conventional DMARDs as therapy concurrent with anti–tumor necrosis factor (TNF) is common in rheumatoid arthritis. However, the efficacy of this association is less clear in PsA.[14] Guidelines published by the Group for Research and Assessment of Psoriasis and Psoriatic Arthritis (GRAPPA) indicate that some conventional DMARDs may be useful in treating peripheral arthritis and nail and skin disease in PsA.[15] However, neither NSAIDs nor traditional DMARDs have been shown to slow radiographic progression of PsA.[12] Newer biologic medications have been introduced that address the unmet medical needs of those patients with moderate to severe PsA or who have had an inadequate response or adverse reactions to conventional DMARDs. The high drug costs of biologic treatment may be offset by decreases in indirect costs coupled with improved health utility.[16] The treatment patterns and health care costs of PsA patients treated with biologics as monotherapy or in combination with conventional DMARDs are unknown.

The purpose of this study was to examine medication use and health care costs in a sample of PsA patients initiating treatment with a biologic medication, either as monotherapy or adjunctively with a conventional DMARD. Longitudinal analyses investigated differences between the 2 cohorts regarding time to discontinuation of the index biologic treatment. Across the cohorts, concurrent medication use in both the pre- and post-index periods was identified, and health care costs over the post period were estimated and statistically evaluated.

MATERIALS AND METHODS

Data Source

Data for this study were obtained from the Truven Health Analytics MarketScan® databases covering the January 1, 2005, to December 31, 2009, time period. These de-identified and Health Insurance Privacy and Portability Act–compliant data sources capture person-specific clinical utilization, biologic medication use, expenditures, and enrollment information across inpatient, outpatient, prescription drug, and carve-out services from a selection of large employers, health plans, and government and public organizations. The MarketScan® databases link paid claims and encounter data to detailed patient information across sites, by type of provider, and over time. The annual medical databases include private sector health data from approximately 100 payers. Historically, more than 500 million claims records are available in the MarketScan® databases. These data represent the medical experience of insured employees and their dependents for active employees, early retirees, (Consolidated Omnibus Budget Reconciliation Act) COBRA continuers, and Medicare-eligible retirees with employer-provided Medicare Supplemental plans.

Patient Selection

A total of 3164 PsA patients in MarketScan's® administrative claims data from January 1, 2005, to December 31, 2009, were identified (**Table I**). Inclusion criteria included adult PsA patients (aged ≥18 years) who: (1) initiated treatment with a biologic medication for a period >1 day between January 1, 2005, and December 31, 2009; (2) had an inpatient diagnosis or ≥2 outpatient diagnoses of PsA (*International Classification of Diseases, Ninth Revision—Clinical Modification* code 696.0) prior to the index date, with at least 1 such diagnosis