Evaluation of Real-World Persistence in Early-Line Abatacept versus Tumor Necrosis Factor Inhibitor in Rheumatoid Arthritis Patients with Anti-Citrullinated Protein Antibody or Rheumatoid Factor Positivity

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Introduction
Treatment of active RA usually includes a conventional DMARD, such as methotrexate, sulfasalazine, or leflunomide. Patients who are intolerant or show an inadequate response to conventional DMARDs are often treated with a targeted DMARD.

There are multiple classes of targeted DMARDs including TNF inhibitors, interleukin-6, CD20, Janus kinase inhibitors, and T-cell costimulators such as abatacept.

In patients with moderately to severely active RA, including patients with positive serologic tests (ACPA+ and/or RF+), who have poorer functional outcomes and radiographic outcomes, randomized controlled trials have shown that abatacept improves the progression of structural damage, reduces symptoms, and improves physical function.1

However, real-world data on abatacept’s use as an early-line biologic agent are limited.

Methods
We performed a multicenter retrospective medical record review of adult RA patients with poor prognostic factors treated at 5 United States clinics located in the West, Midwest, and Southeast.

Patients were treated with abatacept or TNFi as the first biologic treatment at participating clinics (defined as early line).

Positive prognostic factors included:2

- Positive anti-cyclic citrullinated peptide antibodies
- Positive rheumatoid factor antibodies
- Increased C-reactive protein levels
- Elevated erythrocyte sedimentation rate levels
- Presence of 3 or more major ACR criteria

This analysis only included patients who were ACPA+ and/or RF+.

Patients with Crohn’s disease, arthralgias, spondylitis, ulcerative colitis, psoriatic arthritis, or anastomotic failure were excluded.

TNFi included adalimumab, etanercept, infliximab (and biosimilars), certolizumab pegol, or golimumab.

Chart data were abstracted from an electronic case report form. Demographic, disease, and treatment data (start, stop, reason for discontinuation) were abstracted. Data were collected from biologic treatment initiation (8/9/11 to 11/14/16) for ≥12 months (Figure 1).

Treatment persistence (continuation of index treatment with gap ≥60 days) at 12 months and time to discontinuation were reported.

Multivariate logistic and Cox regression modeling with forward selection were used to compare 12-month persistence, risk of overall discontinuation, and discontinuation due to disease progression between abatacept and TNFi treated patients at participating clinics.

Results
Data on 136 patients (47 abatacept, 89 TNFi) were available at the time of analysis (Table 1).

Abatacept-treated patients were older than TNFi patients. There were no significant differences in gender, CCI, or duration of treatment at the clinic (Table 1).

Risk of discontinuation was lower in abatacept vs. TNFi patients overall (p=0.029) and for both ACPA+ (p=0.008) and RF+ (p=0.070) patients. Median time to discontinuation for ACPA+ and RF+ patients was 1,672 and 727 days for abatacept vs. 477 and 562 days for TNFi, respectively (Figure 2).

At 12 months, 83% of abatacept vs. 64% of TNFi patients were persistent (p=0.021) (Table 1).

Adjusted risk of discontinuation was higher in TNFi patients, although not statistically significant (Table 2).

Of 12-month persistence was lower in TNFi than abatacept patients, but not statistically significant (Table 2).

Half of TNFi patients (51.8%) discontinued index treatment due to disease progression, compared to 20.0% of abatacept patients (Figure 3). Adjusted analyses showed that TNFi patients had a significantly higher HR for discontinuing index treatment due to disease progression (HR 3.759, p<0.015) (Table 2).

Conclusions
In a real-world setting, unadjusted analyses demonstrated that ACPA+ and/or RF+ RA patients are significantly more likely to be persistent to abatacept than TNFi at 12 months.

Abatacept patients have a longer time to discontinuation than the TNFi cohort. This difference may be explained by the significantly lower proportion of patients discontinuing abatacept due to disease progression.

Perhaps due to limited sample size, the difference in abatacept and TNFi persistence is not significant, however, numeric trends are consistent.

References
[References are included in the full report.]

Disclosures
All authors disclose no potential conflicts of interest associated with the study. BMS, AstraZeneca, and Bristol Myers Squibb (BMS) are the companies that provided funding for the research described in this paper.

Figure 1. Study design

Figure 2. Time to discontinuation of index treatment

Figure 3. Reason for discontinuation (among patients who discontinued index treatment)

Table 1. Baseline characteristics and persistence

Table 2. Adjusted persistence and risk of discontinuation of index treatment

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Ongoing study, which is currently active. No patients on abatacept or TNFi were included in the comparisons of discontinuation rates.

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1.069 (95% CI: 1.043-1.476)

1.164 (95% CI: 1.017-1.335)

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All patients (N=150)

ACPA+ patients (N=34)

RF+ patients (N=61)

ACPA+ and RF+ patients (N=61)

ACPA+ patients (N=34)

P<0.001

P<0.001

P=0.001

P=0.001

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