Persistence and Failure Rates of Monotherapy Etanercept in Biologic-Naïve Psoriasis Patients: A Retrospective Study

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Clinical trial data on the efficacy of etanercept for the treatment of moderate-to-severe plaque psoriasis may differ from real-world results, yet etanercept remains a widely used therapy despite this and the advent of newer biologic agents. We performed a retrospective study of psoriasis patients using monotherapy etanercept in order to determine how our efficacy data compares to that of pivotal trials.[1,2] Specifically, we determined the persistence and failure rates, mean and median duration in patients who failed therapy, and drug survival amongst the entire cohort.

This study was conducted at the Kaiser Permanente Los Angeles Medical Center on 41 biologic-naïve severe psoriasis patients seen between 2004 and 2015. Inclusion criteria was minimum 3 month etanercept use on standard dosing (50 mg twice weekly for 12 weeks, followed by 50 mg weekly thereafter), and at least 10% body surface area coverage. Failure of treatment was defined as the need for concomitant therapy, either an oral medication (methotrexate, cyclosporine, acitretin) or phototherapy, or to switch to a different agent (oral agent or a biologic ie adalimumab, infliximab, ustekinumab, or secukinumab). Concomitant therapy for conditions other than psoriasis did not constitute failure criteria, and patients who discontinued therapy due to insurance coverage changes were excluded from this study. Failure date was set as the initiation date of the new systemic agent or first phototherapy session. Drug survival, or treatment retention, of etanercept therapy was calculated using the Kaplan-Meier method. This study was approved by the Kaiser Permanente Southern California Institutional Review Board.

Our results showed that 24.4% of patients (10/41) persisted on etanercept monotherapy from a range of 3.9 months to 10.5 years before the end of study, and for an average of 4.6 years (1662 days) and a median of 3.8 years (1401 days). The remaining 75.6% (31/41) of patients had used etanercept for an average of 2.7 years (993 days), and a median of 2.3 years (850 days) before failure. Figure 1 illustrates the distribution of treatment length in these two groups.

Nineteen percent (8/41) of patients had co-existing psoriatic arthritis, and 6 of these patients eventually failed therapy after an average of 2.4 years (874 days). The mean drug survival time in the entire cohort was 3.8 years (1396 days), with a 95% confidence interval (CI) of 2.8-4.8 years (1026-1764 days). The median drug survival was 3.3 years (1217 days). Figure 2 plots the cumulative survival probability using Kaplan-Meier analysis.

A study from the Netherlands[3] found the mean survival duration for etanercept to be 3.8 years with a maximum treatment duration of 7.5 years, similar to our findings. However, a major difference from this study is that ours included solely biologic-naïve patients. Gniadecki et al[4] found a 2.5-year median drug survival rate amongst 449 patients treated with etanercept, and a 2.75-year

FIGURE 1. Years to etanercept persistence or failure.

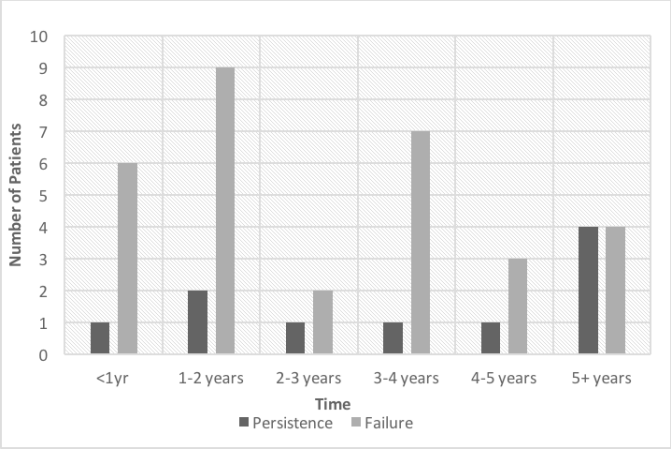
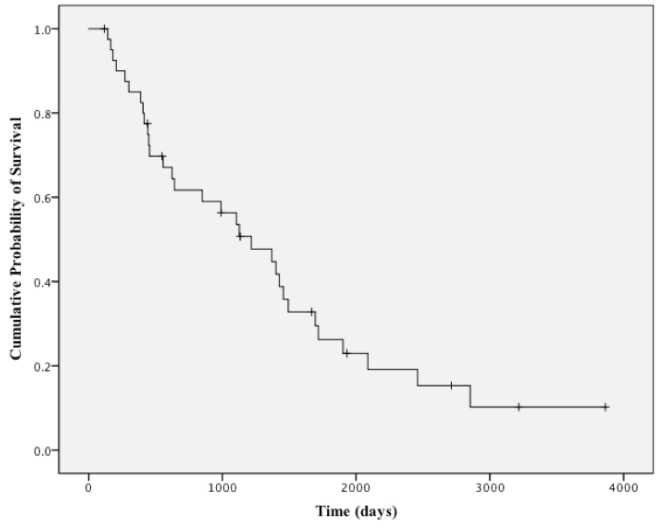


FIGURE 2. Cumulative probability of etenarcept survival in moderate-to-severe psoriasis patients.



median drug survival time when excluding non-biologic-naïve patients. They additionally found a 4-year drug survival rate of 40% in biologic-naïve patients, similar to our rate as illustrated by Figure 2. In comparison to a large-scale, recently published study with a 1-year survival rate of 70%, our 1-year drug survival rate was around 80%.[5]

Although this study is limited by 5% of patients lost to follow up, it provides response durations in a substantial cohort size that can guide expectations of patients starting biologic therapy for the first time. Our results demonstrate that the efficacy of etanercept therapy diminishes with time (Figure 2). Additionally, the biologic-naïve status of our cohort yielded data unaffected by other biologic agents, important given that studies have shown diminished efficacy in patients that switch between agents.[4] Although new agents continue to be developed, dermatologists frequently prescribe etanercept therapy, and future studies should investigate methods to optimize this treatment modality and minimize treatment dissatisfaction amongst patients.

Disclosure

Dr. Wu received research funding from AbbVie, Amgen, AstraZeneca, Boehringer Ingelheim, Coherus Biosciences, Dermira, Eli Lilly, Janssen, Merck, Novartis, Pfizer, Regeneron, Sandoz, and Sun Pharmaceutical Industries; he is a consultant for AbbVie, Amgen, Celgene, Dermira, Eli Lilly, Pfizer, and Sun Pharmaceutical Industries. Dr. Egeberg has received grants from Pfizer, and is a former employee of Pfizer. The other authors do not have any potential conflicts of interest.

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