A Retrospective Analysis of the Clinical and Financial Outcomes of Converting Patients from Originator Remicade to an Infliximab Biosimilar

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Background

- Tumor Necrosis Factor inhibitors substantially improve the treatment of multiple autoimmune disorders.
- Infliximab was the first autoimmune biosimilar made available in Nov. 2016 and multiple studies demonstrate the safety and efficacy of switching patients to an infliximab biosimilar.
- Biosimilars represent 0.9% of all TNF claims in the US compared to 19.5% for Remicade as of March 2019.
- A recent survey indicated that a majority of physicians do not support non-medical switching of stable Remicade patients to a biosimilar due to concerns around physician office management, patient mental health, and treatment safety and efficacy.
- University of Utah Health Plans (UUHP) implemented a clinical program to switch all Remicade-treated patients to a biosimilar starting in Feb. 2019. Patients were switched upon review of reauthorization for Remicade infusions

Objective

- Describe the financial and clinical outcomes of patients switched from Remicade to a biosimilar within University of Utah Health Plans

Methods

- UUHP claims data, prior authorization requests, and chart notes from Feb. 2019 to Apr. 2020 for 63 patients ages 13 to 63 were accessed to determine the demographics and clinical history of patients switched from Remicade to a biosimilar.
- To calculate savings, the cost per 100mg of the most recent Remicade infusion was compared to subsequent biosimilar claims for the same patient.

Results

Table 1.Patient Demographics & Clinical History

Demographics & History	
Sex	Count (%)
Male	30 (47.6%)
Female	33 (52.4%)
Patient Age, Mean (range)	
39 (13-63)	
Patient weight, Mean (range)	
81.8 kg (54.3-126.1)	
Insurance Type	Count (%)
Commercial	42 (66.7%)
Medicaid	21 (33.3%)
Geographic Location	Count (%)
Utah	48 (76.2%)
Idaho	10 (15.9%)
Montana	5 (7.9%)
Diagnosis	Count (%)
Crohn's Disease	30 (47.6%)
Ulcerative Colitis	11 (17.5%)
Rheumatoid Arthritis	8 (12.7%)
Psoriatic Arthritis	4 (6.3%)
Other	10 (15.9%)
Years since diagnosis, Mean (range)	
9.7 (1-35)	
Months on Remicade, Mean (range)	
45.24 (3-179)	

- UUHP identified 63 patients switched from Remicade to a biosimilar, accounting for 91% of infliximab patients.
- The most common diagnoses were Crohn's disease (n=30), ulcerative colitis (n=11), rheumatoid arthritis (n=8), psoriatic arthritis (n=4), and other (n=10) with an average time on the originator product of 3.7 years and time since diagnosis of 9.7 years.

Table 3. Prior Treatment History

Prior Biologic Treatment History (n=61)	
Previous Biologic	Count (%)
Humira	18 (29.5%)
Enbrel	9 (14.8%)
Cimzia	4 (6.5%)
Orencia	3 (4.9%)
Simponi	2 (3.3%)
Otezla	2 (3.3%)
Actemra	1 (1.6%)
Stelara	1 (1.6%)
Entyvio	1 (1.6%)
At least one Biologic	17 (27.9%)
Multiple Biologics	10 (16.4%)

Table 4. Clinical and Financial Outcomes of Converted Patients

Clinical and Financial Outcomes	
Follow up Time, Mean (range)	
6.2 months (0-14)	
Months on biosimilar, Mean (range)	
8 (2-21)	
Infliximab Treatment Stability	Count (%)
Same or improved dose	44 (70%)
Dose or frequency increase	9 (14.3%)
Switched back to Originator	4 (6.3%)
Switched Medication Classes	3 (4.8%)
Lost to Follow up	3 (4.8%)
Financial Savings to the Health Plan	
$725,000	

- In total, 44 (70%) patients were on infliximab at the same or lower dose, with a mean follow-up time of 6.2 months. Nine patients had a dose/frequency increase, however, each patient had unstable or active disease prior to and following the switch.
- By summing the individual savings calculated for each patient, health plan savings was nearly $725,000, or $11,508 per transitioned patient.

Discussion

- Over 90% of all UUHP Remicade patients had been switched from the originator infliximab to a biosimilar product by April 2020.
- Transitioning patients from the originator product to a biosimilar did not come with excess safety or clinical risks.
- The transition process included direct outreach via telephone to providers' offices and was generally well accepted by all affected physicians
- This transitioning model could be applied to future disease states and medications as additional biosimilars come to market.
- Future retrospective research should stratify results by disease severity and treatment history

Conclusion

- This study demonstrates the real-world savings and low clinical risk of switching Remicade patients to a biosimilar from a health plan perspective. The results suggest that more health plans could implement similar programs and switch patients from the originator to a biosimilar.

References

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