

Price Trends and Analysis of Targeted Immunomodulatory (TIM) Disease-modifying Antirheumatic Drugs for Rheumatoid Arthritis Therapy

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BACKGROUND

- Targeted Immunomodulatory (TIM) disease-modifying antirheumatic drugs (DMARDs) have promoted the prognosis of many rheumatoid arthritis patients. However, high cost of these innovations has raised concern about the financial burden on patients and healthcare payers.
- As a result, TIMs' accessibility and affordability, as well as adherence could be affected.
- However, price analysis of these innovations may provide insights on making informed decisions to address the continuous price increase and financial burden

OBJECTIVES

- The study assessed price change of the branded TIMs approved in the United States.
- We also investigated potential factors influencing market entry (ME) prices

METHODS

- The WAC history for each branded TIM was collected from their ME to last effective (LE) dates from Red book.
- The average annual percentage increase and the compound annual growth rate (CAGR) were estimated.
- The WACs per unit dose at the LE dates were used to calculate the drug cost of therapy per year.
- Trends in WACs per unit dose were also graphically evaluated.
- Correlation analysis was conducted to assess factors influencing the TIMs prices at ME.

RESULTS

- A total of 13 TIMs are currently approved for RA therapy in the US
- 10 are biologics, while only 3 are new molecular entities
- Majority of the biologics had experienced the highest increase in price compared to the non-biologics

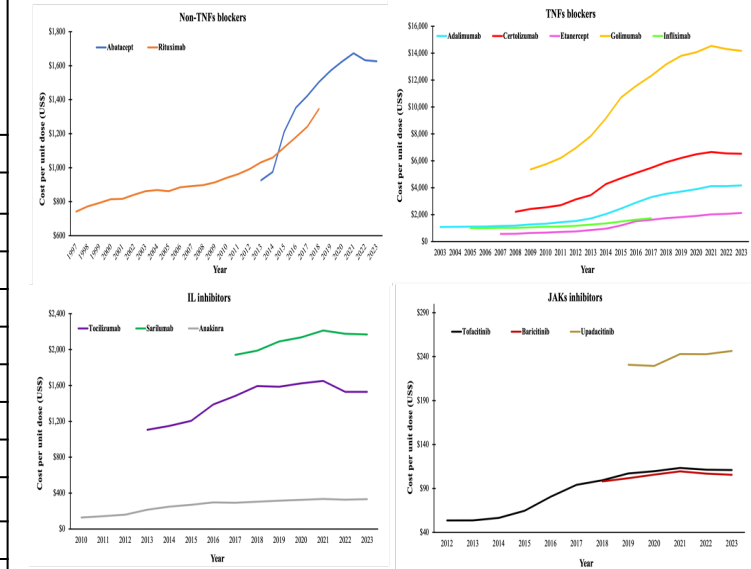
Correlation Analysis

	Intravenous route	Subcutaneous route	Oral route	Biologics	Non-TNFs blocker	TNFs blocker	IL inhibitor	JAKs inhibitor	Orphan designation
WACs at ME	-0.16	0.48	-0.40	0.40	-0.20	0.52	-0.03	-0.40	-0.28

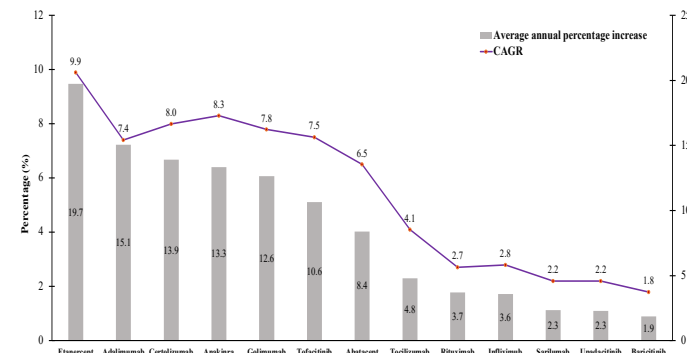
Approved TIMs

Generic name	Classification type	Approval date	ME date
Abatacept	Non-TNFs blockers	12/23/05	11/1/13
Rituximab		11/26/97	12/16/97
Adalimumab	TNFs blockers	12/31/02	1/2/03
Certolizumab		04/22/08	4/22/08
Etanercept		11/02/98	4/30/07
Golimumab		04/24/09	2/24/09
Infliximab		08/24/98	9/1/98
Tocilizumab	IL inhibitors	01/08/10	10/21/13
Sarilumab		05/22/17	5/22/17
Anakinra	JAKs inhibitors	11/14/01	3/31/10
Tofacitinib		11/06/12	11/6/12
Baricitinib		05/31/18	6/1/18
Upadacitinib		08/16/19	8/16/19

Trends in WAC per unit dose



Percentage Increase over the Years



CONCLUSION

- Entry of newer TIMs may influence an increase in older TIMs' prices.
- Route of administration, approval types, TIM classification, and orphan designation are regulatory factors associated with the price of TIMs at ME.
- Sponsorship of non-biologics and biosimilars are encouraged to reduce the financial burden on patients and healthcare payers and promote TIMs' affordability and utilization