Article title

Treatment persistence in rheumatoid arthritis before and after etanercept biosimilar introduction: A nationwide Australian real-world study

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Supplementary Table S1: PBS item codes to identify the use of etanercept in severe RA

Cohort	PBS item codes
Historical	9089J, 9090K, 9459W, 9460X
Contemporary	9089J, 9090K, 9459W, 9460X, 11211C, 11218K, 11219L, 11220M

Supplementary Table S2: ATC codes to identify the use of clinically relevant medications (csDMARDs, NSAIDs, corticosteroids) in RA

Drug	ATC code
csDMARDs	
Methotrexate[†]	L04AX03
Leflunomide	L04AK01, L04AA13
Sulfasalazine	A07EC01
Hydroxychloroquine	M01CA
NSAIDs	
Celecoxib	M01AH01
Diclofenac	M01AB05
Ibuprofen	M01AE01
Indomethacin	M01AB01
Ketoprofen	M01AE03
Mefenamic acid	M01AG01
Meloxicam	M01AC06
Naproxen	M01AE02
Piroxicam	M01AC01
Corticosteroids	
Prednisone	H02AB06
Prednisolone	H02AB07
Methylprednisolone	H02AB04

[†]Excluded L01BA01 as it is classified as an antineoplastic agent used in cancer therapy

Supplementary Table S3: ATC codes to identify the use of bDMARDs in RA

Drug	ATC code
Abatacept	L04AA24
Adalimumab	L04AB04
Certolizumab pegol	L04AB05
Etanercept	L04AB01
Golimumab	L04AB06
Infliximab	L04AB02
Rituximab	L01FA01, L01XC02
Tocilizumab	L04AC07

Supplementary Table S4: Cox regression model of the main analysis

	aHR (95% CI)
Cohort	
Historical cohort	Reference
Contemporary cohort	1.00 (0.96–1.05)
Age	1.00 (0.99–1.00)
Gender	
Male	Reference
Female	1.10 (1.04–1.16)
Socioeconomic status	
Q1 (most advantaged)	Reference
Q2	1.02 (0.95–1.10)
Q3	1.10 (1.03–1.19)
Q4	1.03 (0.95–1.11)
Q5 (most disadvantaged)	1.07 (0.98–1.16)
Unknown	0.90 (0.24–3.43)
Remoteness of residence	
Major cities	Reference
Inner regional	1.01 (0.95–1.07)
Outer regional	0.89 (0.81–0.99)
Remote	1.27 (0.98–1.65)
Very remote	0.97 (0.63–1.51)
Unknown	1.37 (0.36–5.20)
Weighted Rx-Risk comorbidity score	1.03 (1.03–1.04)
Concurrent use of csDMARD	0.41 (0.39–0.44)
Concurrent use of NSAID	0.62 (0.59–0.65)
Concurrent use of corticosteroid	0.61 (0.58–0.64)

Supplementary Table S5: Distribution of censoring types of the main analysis

Historical cohort (n=4,461)			
Discontinuation event	Censored by end of observation	Censored by maximum three years follow-up	Censored by death
2,998	1,083	344	36
Contemporary cohort (n=5,773)			
Discontinuation event	Censored by end of observation	Censored by maximum three years follow-up	Censored by death
4,016	994	698	65

Supplementary Table S6: Sub cohorts within the contemporary cohort by year of treatment initiation

Year of initiation†	**Median time to treatment discontinuation*, months (95% CI)**	**aHR** for treatment discontinuation (95% CI)**
2013–2016 (pre-biosimilar historical), n=4461	10.6 (10.0–11.4)	Reference
2018, n=1221	10.2 (9.5–11.4)	0.99 (0.94–1.15)
2019, n=1314	10.1 (9.3–12.3)	0.98 (0.95–1.10)
2020, n=1301	10.5 (9.7–12.9)	1.00 (0.93–1.08)
2021, n=1460	9.8 (9.2–10.7)	1.03 (0.88–1.05)
2022, n=477	9.5 (8.7–11.0)	1.04 (0.80–1.09)

† When modelling year of initiation as a continuous variable in a Cox regression model, no significant linear trend was observed (aHR per year increase: 0.99, 95% CI: 0.97–1.01, $p = 0.11$).

*Log-rank test p = 0.5

**Adjusted for age, sex, socioeconomic status, remoteness of usual residence, concurrent use of medications (csDMARDs, corticosteroids, NSAIDs), and Rx-Risk score in the multivariate Cox regression model

Supplementary Table S7: Simulation-based analysis of treatment discontinuation using a 40% contemporary subsample (n=100 iterations)

Cohort	Median time to treatment discontinuation, months (95% CI)	aHR* for treatment discontinuation (95% CI)
Historical cohort (n =4,461)	10.6 (10.0–11.4)	Reference
Contemporary cohort (n=2,309)	10.0 (9.4–10.7)	0.99 (0.94–1.06)

*Adjusted for age, sex, socioeconomic status, remoteness of usual residence, concurrent use of medications (csDMARDs, corticosteroids, NSAIDs), and Rx-Risk score in the multivariate Cox regression model

Supplementary Table S8: Sensitivity analysis of treatment discontinuation definitions using 30- and 90-day gaps

	Median time to treatment discontinuation, months (95% CI)	Treatment retention rate at one-year (95% CI)	Treatment retention rate at two-year (95% CI)	aHR* for treatment discontinuation (95% CI)
30-day†				
Contemporary cohort (n=5,773)	7.3 (6.7–7.8)	35.4% (34.2%–36.6%)	21.0% (19.9%–22.1%)	1.00 (0.96–1.05)
Historical cohort (n=4,461)	7.0 (6.4–7.5)	35.2% (33.9%–36.7%)	20.9% (19.7%–22.2%)	Reference
90-day‡				
Contemporary cohort (n=5,773)	12.3 (11.2–13.2)	50.3% (49.0%–51.6%)	36.8% (35.5%–38.1%)	1.04 (0.99–1.09)
Historical cohort (n=4,461)	13.1 (11.6–14.5)	51.1% (49.6%–52.5%)	38.4% (37.0%–40.0%)	Reference

*Adjusted for age, sex, socioeconomic status, remoteness of usual residence, concurrent use of medications (csDMARDs, corticosteroids, NSAIDs), and Rx-Risk score in the multivariate Cox regression model

† Log-rank test p = 0.78

‡ Log-rank test p = 0.11