The Consistency of US Real-World Rheumatoid Arthritis Disease-Modifying Antirheumatic Drug Treatment Patterns with American College of Rheumatology Guidelines

Robin K. Dore, Jenya N. Antonova, Lawrence Chang, Huan Huang, Jing He, Mark C. Genovese

Conflict of Interest Statement

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Jenya N. Antonova is an employee of Gilead Sciences, Inc.

Lawrence Chang is a contracted consultant of Gilead Sciences, Inc.

Huan Huang was an employee of IQVIA at the time of presentation development.

Jing He is an employee of IQVIA.

Mark C. Genovese is an employee of Gilead Sciences, Inc., and has financial ties with AbbVie, Astellas, Eli Lilly and Co., Galapagos NV, Gilead Sciences, Inc., Pfizer, and Vertex.

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The consistency of US real-world rheumatoid arthritis disease-modifying antirheumatic drug treatment patterns with American College of Rheumatology guidelines

Robin K. Dore,[1] Jenya N. Antonova,[2] Lawrence Chang,[2] Huan Huang,[3] Jing He,[3] Mark C. Genovese[2,4]

[1]Robin K. Dore, MD, private practice, Tustin, CA; [2]Gilead Sciences, Inc., Foster City, CA; [3]IQVIA, Plymouth Meeting, PA; [4]Division of Immunology and Rheumatology, Stanford University, Stanford, CA

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Background: American College of Rheumatology 2015 Guidelines recommend treat-to-target approach to RA management

DMARD-naïve	• Initiate treatment with csDMARD monotherapy
First csDMARD failure	• Use csDMARD triple therapy or switch to a targeted immunomodulator (TIM: bDMARD or JAKi) regimen
First bDMARD failure	• Switch to another TIM • **TNFi failure:** conditional recommendation to switch mechanism of action rather than use another TNFi

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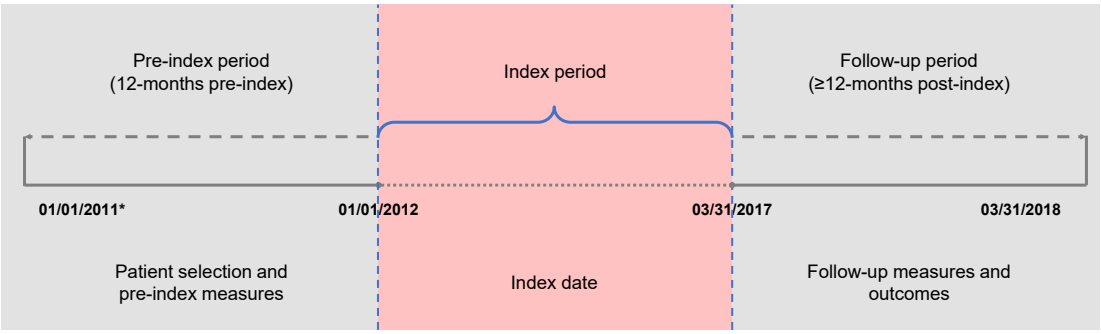
Methods

Objective: To examine real-world treatment patterns among patients with RA initiating their first DMARD



- Data from IQVIA PharMetrics® Plus database
- Adult patients with RA (defined as ≥2 RA diagnostic codes ≥30 days apart)
- Initiated first DMARD regimen between 1/1/2012 and 3/31/2017 (index date)
- Continuous enrollment 1 year before (pre-index) and ≥1 year after index date (post-index)
- A variable follow-up period with at least 1-year follow-up was applied

*First RA diagnosis code: anytime from 1/1/2011–3/31/2017. Second RA diagnosis was during pre-index period and ≥30 days apart from first diagnosis.
RA, rheumatoid arthritis; DMARD, disease-modifying antirheumatic drug.

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Methods

Analysis

Treatment patterns

- Mapped sequentially up to 6 regimens
- Sankey diagram graphically represented treatment sequences

Persistency

- Time to loss of persistency was defined as time from initial treatment fill date until one of the following:
  - Gap of >60 days in days filled
  - Date of switch/augmentation to a different DMARD regimen
  - End of observation
- KM curves estimated persistency
- Log-rank tests compared KM curves

DMARD, disease-modifying antirheumatic drug; KM, Kaplan-Meier.

Results

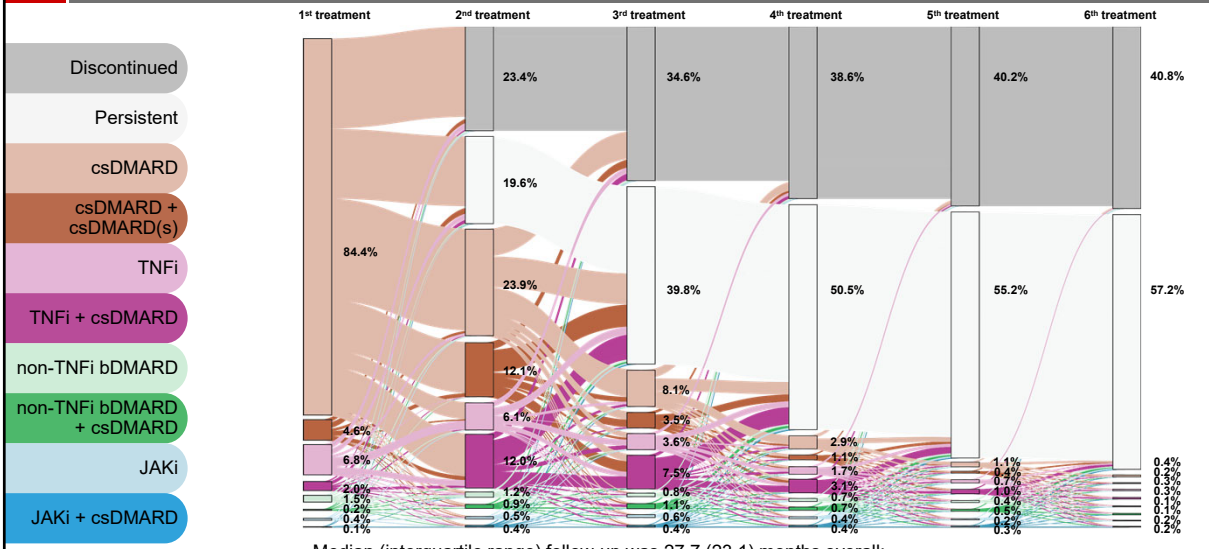
The baseline patient demographic and clinical characteristics were typical for RA patient populations

	All patients N = 28,201	Regimen 1 monotherapy n = 26,261	Regimen 1 combination therapy* n = 1,940	*P* value†
Age, median (IQR), y	54 (13)	54 (13)	54 (13)	.61
Sex, female, n (%)	20,597 (73.0%)	19,158 (73.0%)	1,439 (74.2%)	.24
Duration of RA, mean ± SD, y	0.6 ± 1.0	0.6 ± 1.0	0.7 ± 1.1	< .0001
Rheumatologist, n (%)	11,523 (40.9%)	10,733 (40.9%)	790 (40.7%)	
DCCI, mean ± SD	1.2 ± 1.1	1.2 ± 1.1	1.1 ± 1.0	.24
Index year, n (%)				< .0001
2012	5,492 (19.5%)	5,125 (19.5%)	367 (18.9%)	
2013	5,029 (17.8%)	4,699 (17.9%)	330 (17.0%)	
2014	4,490 (15.9%)	4,164 (15.9%)	326 (16.8%)	
2015	6,221 (22.1%)	5,673 (21.6%)	548 (28.2%)	
2016	6,083 (21.6%)	5,757 (21.9%)	326 (16.8%)	
2017	886 (3.1%)	843 (3.2%)	43 (2.2%)	
Payer type, n (%)				< .0001
Commercial	15,386 (54.6%)	14,383 (54.8%)	1,003 (51.7%)	
Medicaid	1,373 (4.9%)	1,244 (4.7%)	129 (6.6%)	
Medicare Risk	542 (1.9%)	498 (1.9%)	44 (2.3%)	
Self-insured‡	9,928 (35.2%)	9,257 (35.2%)	671 (34.6%)	
Unknown	972 (3.4%)	879 (3.3%)	93 (4.8%)	

*Combination therapy was defined as the addition of an RA therapy to the index therapy within 30 days after the index date, with continuation of the index therapy. †*P* value for comparison of monotherapy and index combination therapy group was calculated using T-test for continuous variables and χ^2 or Fisher's exact test for categorical variables. ‡Self-insured plans included employers taking the financial risk for providing healthcare benefits to its employees. DCCI, Deyo-Charlson comorbidity index; IQR, interquartile range; RA, rheumatoid arthritis; SD, standard deviation; y, years.

Results

During ~2.5 years follow-up, patients had up to 5 therapy changes, leading to over ½ patients reaching persistency, and 41% patients discontinued DMARDs



Median (interquartile range) follow-up was 27.7 (23.1) months overall:
27.7 (23.2) months for monotherapy and 28.7 (21.6) months for combination therapy

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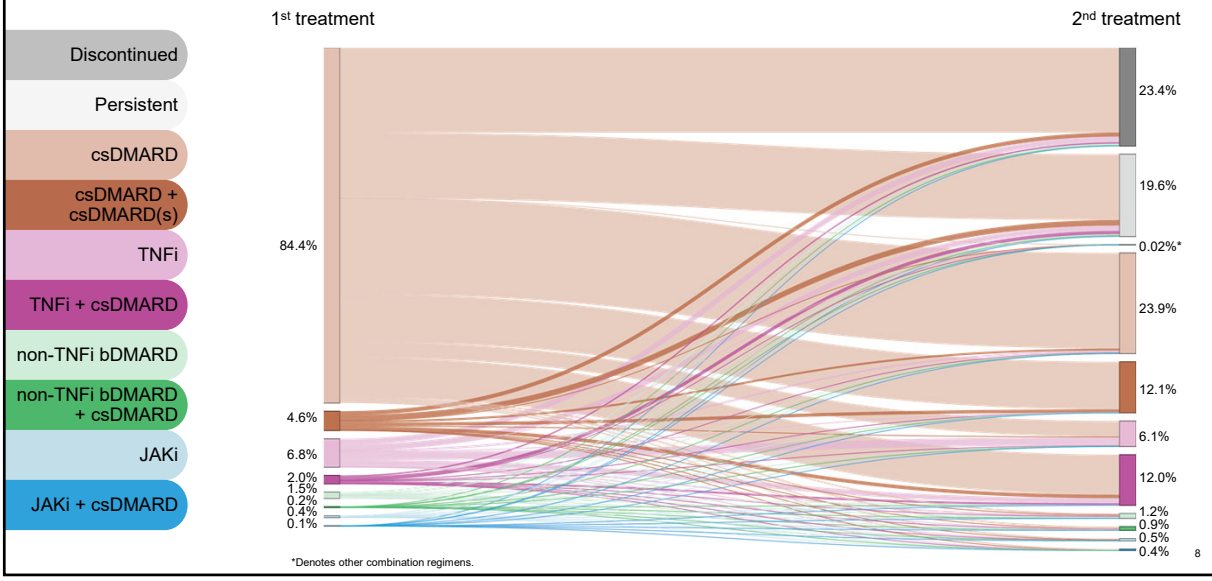
Results

First Treatment: most DMARD-naïve patients initiated DMARD treatment with csDMARD monotherapy, consistent with recommendations



*Denotes other combination regimens.

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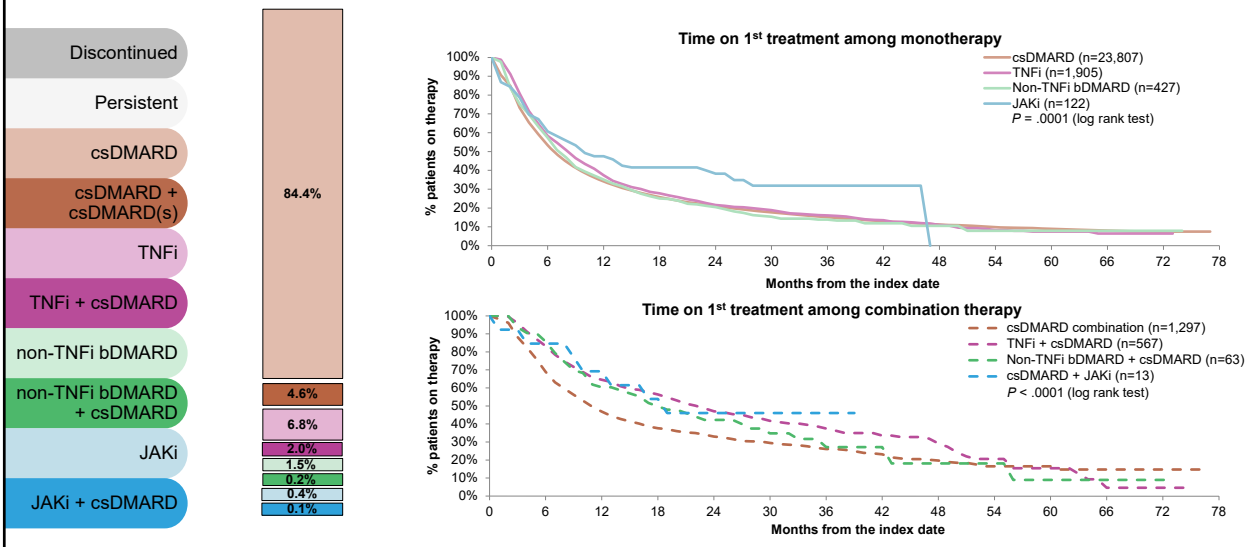
Results

First Treatment: persistency was best for JAKi among monotherapies



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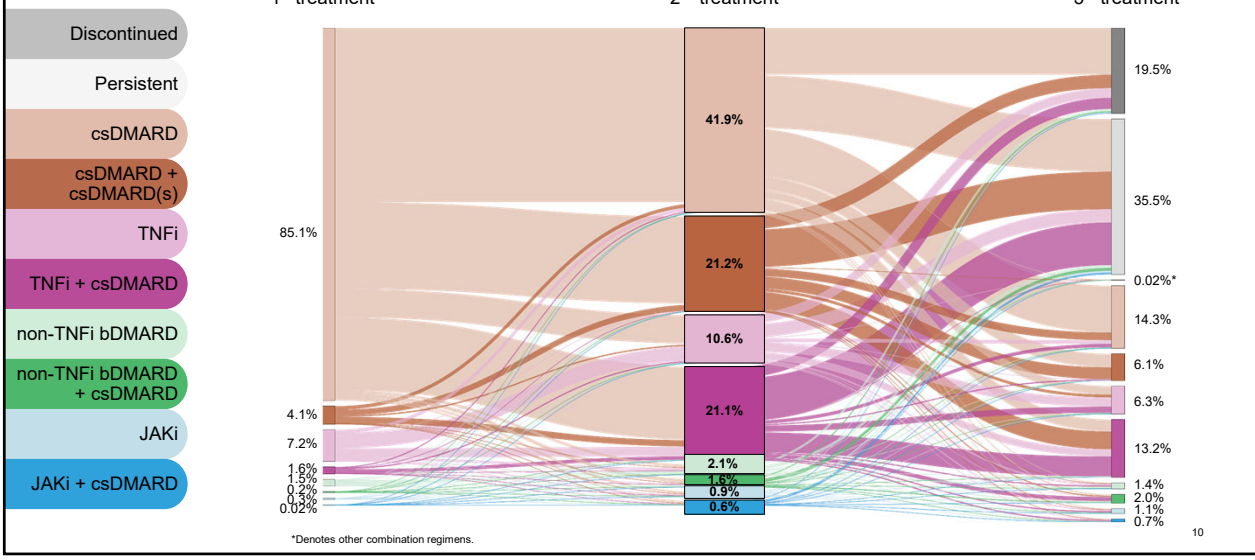
Results

Second Treatment: as 2nd treatment, most patients initiated csDMARD monotherapy, contrary to recommendations



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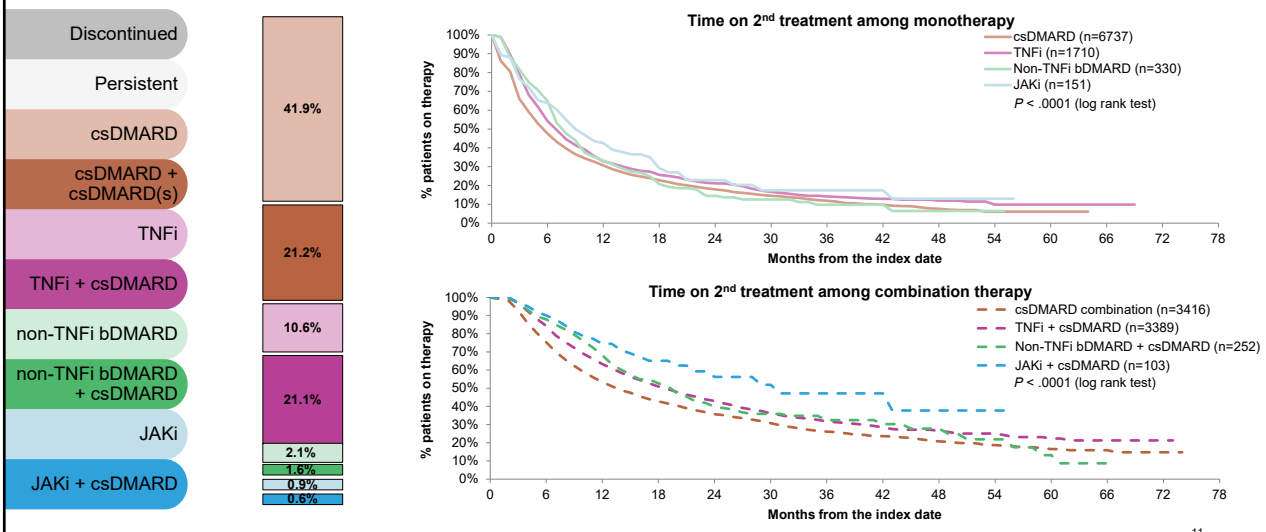
Results

Second Treatment: JAKi had better persistency than other therapies



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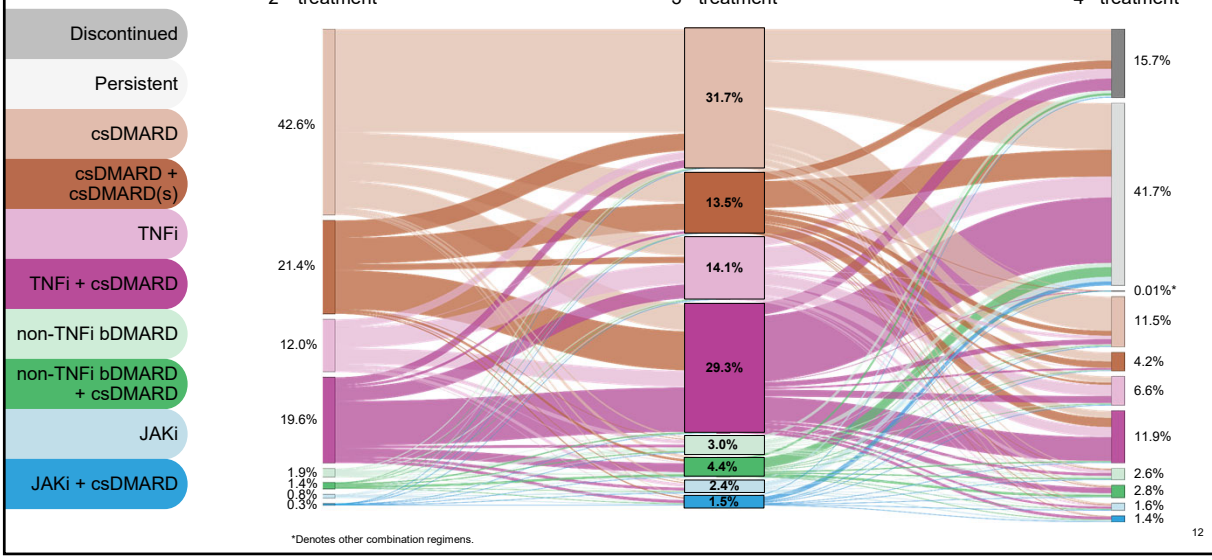
Results

Third Treatment: contrary to the guidelines, many patients continued cycling through csDMARD or TNFi, including monotherapy



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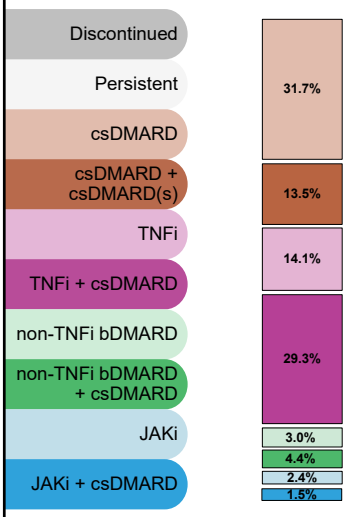
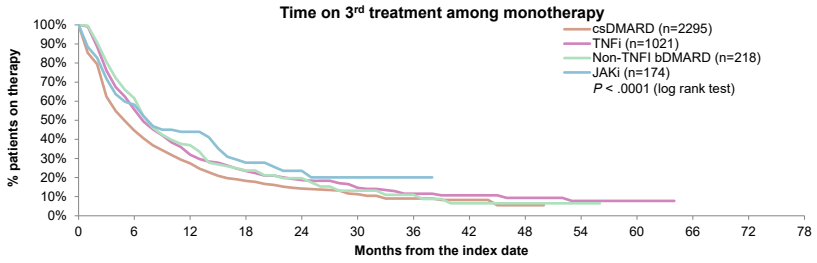
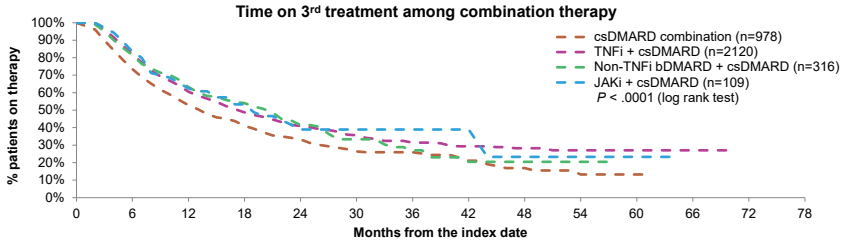
Results

Third Treatment: JAKi persistency was better than or similar to the next best treatment; csDMARD showed worst persistency among combination therapies







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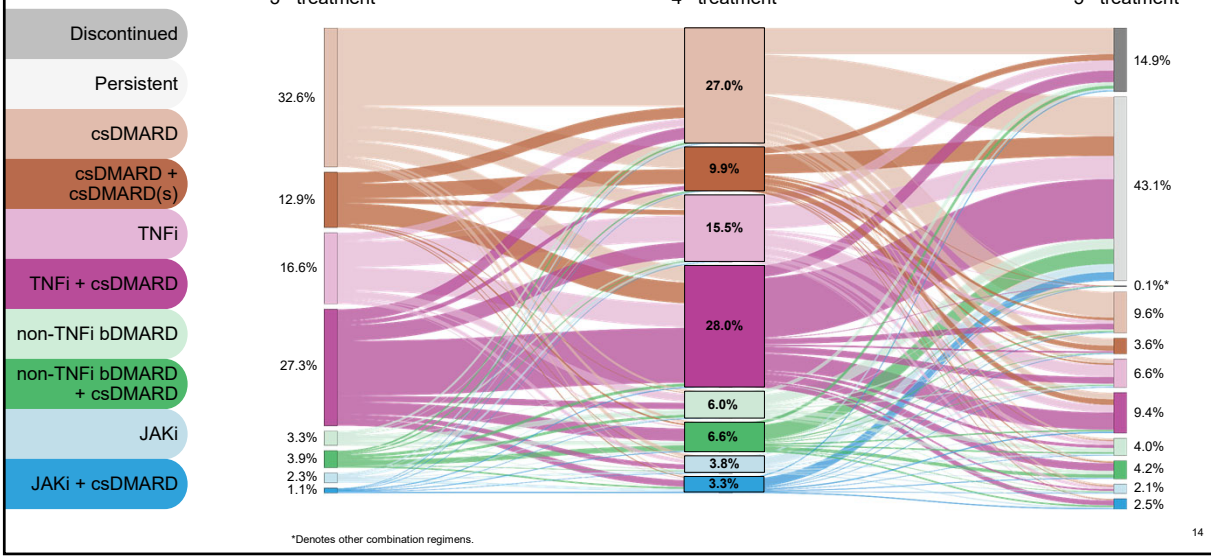
Results

Fourth Treatment: contrary to recommendations, cycling of csDMARD monotherapy and TNFi regimens remains common



*Denotes other combination regimens.

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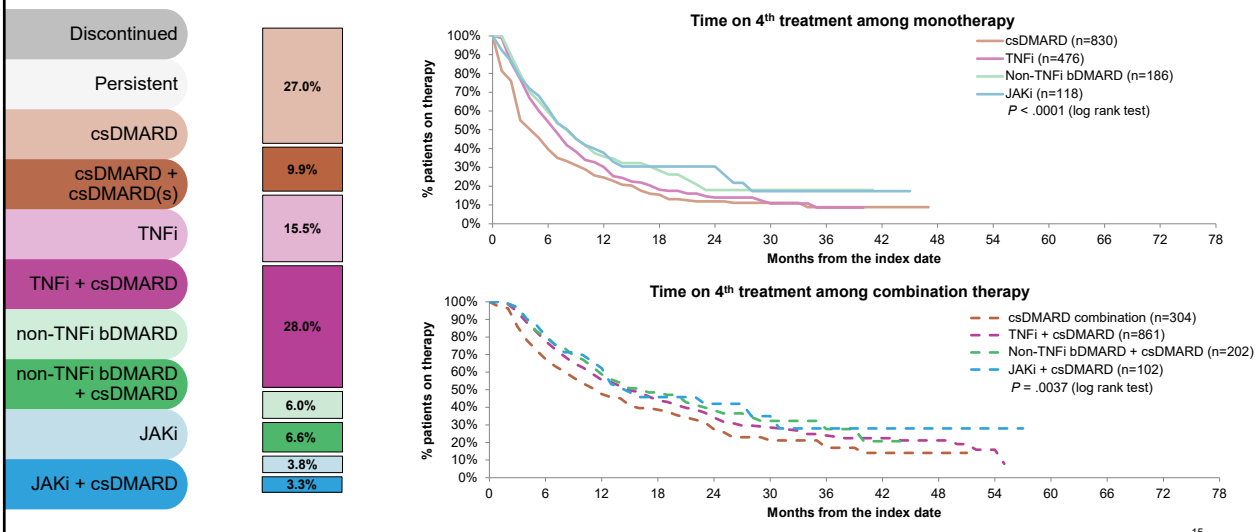
Results

Fourth Treatment: JAKi and non-TNFi bDMARDs had comparably better persistency than other treatments



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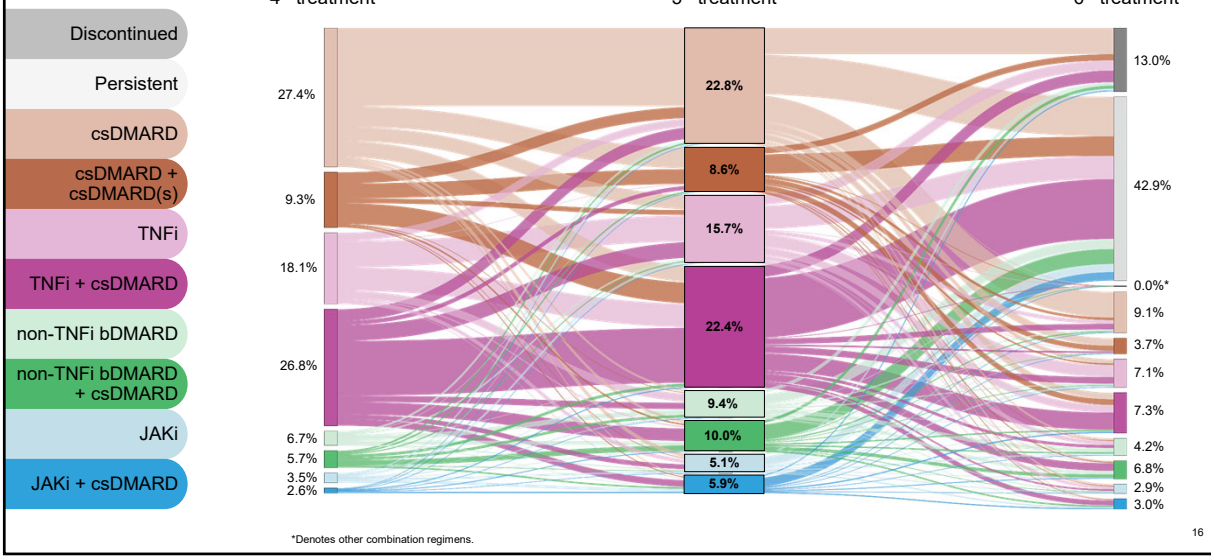
Results

Fifth Treatment: contrary to recommendations, cycling of csDMARD monotherapy and TNFi regimens remains common at all steps



*Denotes other combination regimens.

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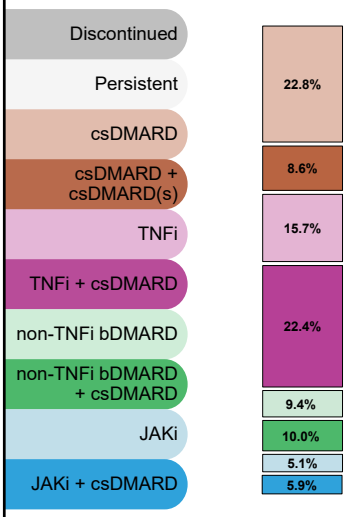
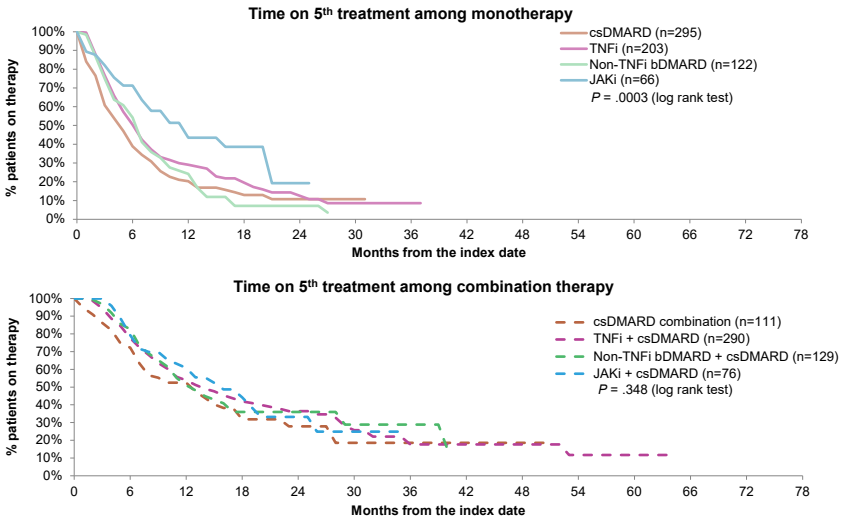
Results

Fifth Treatment: persistency by JAKi was better than other monotherapies, and comparable to other combination therapies





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Limitations

- Because the study was not designed to evaluate clinical decision at the time of therapy switch, it cannot provide insight into the potential role of comorbidities in therapy selection
- Reasons for treatment discontinuations were not delineated as part of this study design
- The study did not include baricitinib and upadacitinib, as they were not available during the study period

DMARD, disease-modifying antirheumatic drug.

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Discussion and Conclusions

- During the median ~2.5-year follow-up, patients with RA demonstrated an ongoing need for safe and efficacious treatment options, as evidenced by:
  - Short treatment durability
  - Frequent therapy switching
  - Cumulative proportion of patients (57.2%)* continuing on a DMARD regimen
- DMARD discontinuations (40.8%)* deviate from treatment guidelines and US quality metrics, which advise sustained DMARD treatment
- Repeated within-class cycling indicates discordance with recommendations for treatment advancement
- De-escalating treatment from TIM to csDMARD regimens may also deviate from guidelines
- JAKi persistency was better than or similar to the next best treatment
- Understanding treatment patterns and durability can help providers and population health decisions makers optimize treatment guidelines and disease management

Thank You

Correspondence to:

Jenya Antonova
333 Lakeside Dr.
Foster City, CA 94404
(650) 574-3000
Jenya.Antonova@gilead.com