Effectiveness of first, second or third biologic DMARDs –

clinical characteristics are more important than choice of the substance

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Conclusions

Patients with previous failures of bDMARDs had poorer baseline clinical status and lower responses than those on a first bDMARD. When using real-life data to compare different substances, it has to be taken into account that there are strong preferences which of the substances are used first. Unadjusted head-to-head comparisons of particular bDMARDs are biased by indication and likely to contrast biologic naïve patients vs. patients with one or more bDMARD failures.

Background

At least one third of patients with long-standing RA starting treatment with a biologic (b)DMARD will have to change the substance within three years due to inefficacy or adverse events. The question arises, which treatment responses we can expect after one or more failures of biologic therapies and whether there are differences in the effectiveness between individual substances used as second- or third-line bDMARDs.

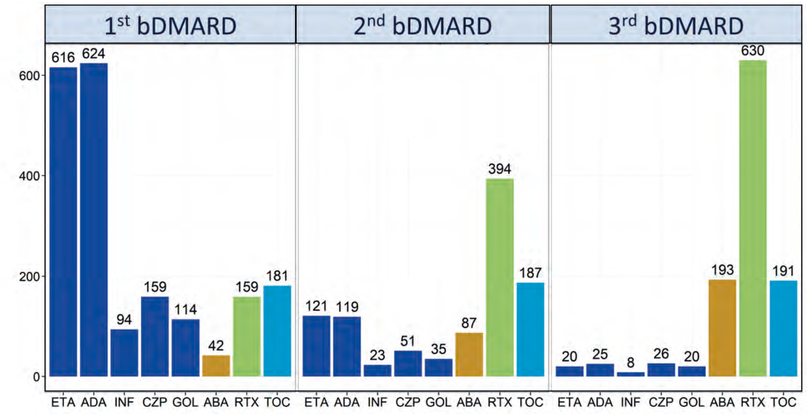
Results

1. Patients' baseline characteristics

	1st bDMARD	2nd bDMARD	3rd bDMARD
N	1,989	1,017	1,113
Female, %	74.3	77.3	79.4
Rheumatoid factor positive, %	72.5	78.7	80.4
Age	56.9 (12.7)	57.0 (12.4)	56.0 (12.4)
Disease duration	9.4 (8.7)	12.7 (9.4)	14.5 (9.3)
No. previous nbDMARDs	2.5 (1)	2.8 (1.2)	3.2 (1.3)
Disease activity (DAS28)	5.1 (1.3)	5.2 (1.3)	5.4 (1.3)
FFbH (% of full physical function)	65.1 (23.2)	59.7 (22.9)	54.5 (23)
No comorbidity, %	30.0	25.5	24.7
≥3 comorbidities, %	23.5	29.8	30.2

IF not indicated otherwise, mean values with standard deviations are presented.

2. Frequencies of single bDMARDs across therapy strata



Biologic naïve RA patients are primarily treated with anti-TNF; other classes of biologics are preferred in patients with previous bDMARD treatment failures.

3. Outcome of DAS28 adjusted for baseline

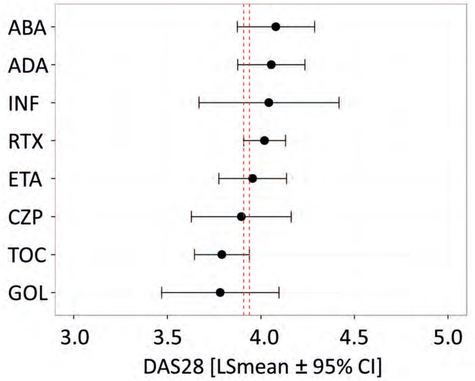
	1st bDMARD	2nd bDMARD	3rd bDMARD
Month 12	3.6 [3.6, 3.7]	3.9 [3.8, 4.0]	4.1 [4.0, 4.2]
Month 24	3.6 [3.5, 3.6]	3.7 [3.6, 3.8]	3.9 [3.8, 4.0]

LS mean values of DAS28 with 95 % confidence intervals.

Patients of all bDMARD therapy strata showed significant improvement of disease activity after 12 months of treatment. They adhered to the level of improvement between months 12 and 24.

4. Impact of particular bDMARDs on DAS28 -

Outcome of patients with 2nd bDMARD (month 12)



Clinical characteristics such as low DAS28 at baseline, RF positivity, no comorbidities or no DMARD failures were significant predictors of response rather than the particular bDMARD within the respective therapy stratum.

Abbreviations: nbDMARD non-biologic DMARD, bDMARD biologic DMARD, ETA etanercept, ADA adalimumab, INF infliximab, CZP certolizumab pegol, GOL golimumab, ABA abatacept, RTX rituximab, TOC tocilizumab.

Objectives

We aimed to investigate the effectiveness of a first, second or at least third bDMARD therapy in RA patients observed in the German biologics register RABBIT.

Methods

Patients who started a bDMARD therapy and were enrolled in RABBIT between 2007 and 2012 were eligible for the present analysis. They were stratified in bDMARD therapy strata according to the number of prior bDMARD failures. The 24-month course of disease activity captured by the composite disease activity score in 28 joints ($DAS28_{CrP}$) was examined by linear mixed effects models. Adjustment was made for the baseline parameters sex, rheumatoid factor, $DAS28_{CrP}$, the number of prior non-biologic DMARDs, the number of comorbidities, as well as for the observation time.

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Kaufmann J, Klopsch T, Kaufmann J, Tony H, Liebhaber A, Eisterhues C, Richter C, Gräßler A, Krause A, Dockhorn R, Bussmann A, Wilden E, Remstedt S, Rockwitz K, Ochs W, Zinke S, Berger S, Bergerhausen H, Meier L, Balzer S, Bohl-Bühler M, Edelmann E, Wassenberg S, Krummel-Lorenz B, Pick D, Backhaus M, Kekow J, Lebender S, Körber H, Thiele A, Kühne C, Wiesmüller G, Fricke- Wagner H, Tremel H, Stille C, Krüger K, Schwarze I, Ständer E, Kellner H, Aringer M, Burmester G, Harmuth W, Manger K, Zänker M, Weiß K, Kapelle A, Karberg K, Euler H, Reck A, Sörensen H, Schmitt-Haendle M, Moosig F, von Hinüber U, Demary W, Eidner T, Prothmann U, Hamann F, Schneider M, Alliger K, Menne H, Seifert A, Häntsch J, Herzer P, Schröder J, Wiesent F, Hauser M, Höhle M, Krause D, Jendro M, Dahmen G, Späthling-Mestekemper S, Dexel T, Mark S, Möbius E, Riechers E, Fliedner G, Gauler G, Möbius C, Alten R, Engel J, Roch B, Leumann K, Sekura M, Henes J, Herzberg C, Marycz T, Hübner G, Schuch F, Wendler J.

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