Comparing real-world retention rates in a matched cohort of rheumatoid arthritis patients who either remained on the etanercept originator or switched to a biosimilar

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Conclusions

Retention rates of etanercept treated RA patients who were either switched to the biosimilar SB4 or who stayed on the originator are comparable. Only few patients switched back to the originator.

Background & Objectives

In Germany, the first etanercept biosimilar was licensed in 2016. In contrast to other European countries there is no uniform national recommendation for the prescription of biosimilars. The aim of this study was to compare treatment survival between patients who were switched from the etanercept originator to the etanercept biosimilar SB4 and patients who stayed on the originator treatment.

Patients & Methods

We used data of rheumatoid arthritis patients observed in the prospective, longitudinal RABBIT (***R***heumatoid ***A***rthritis: O***b***servation of ***bi***ologic ***t***herapy) cohort until November 2018 who were treated with the etanercept originator (oETA) for at least six months. Patients who thereafter were switched to the biosimilar SB4 (bsETA) were matched (1:n) to patients who stayed on the original treatment using prescription time distribution matching [1] to control for survival bias. Matching criteria were age, sex, duration of originator treatment until switch or corresponding time in non-switchers, and DAS28 at switch or corresponding time point in non-switchers. The retention rates over one year were analyzed using Kaplan-Meier curves. If a patient stopped therapy due to remission or switched to another etanercept treatment, it was not counted as treatment discontinuation, except for bsETA patients who switched back to oETA.

[1] Zhou Z et al. Am J Epidemiol. 2005 Nov 15; 162(10):1016-1023.

Results

Overall, 1,751 patients fulfilled the inclusion criteria of whom 113 were switched to bsETA. Of these, 102 switchers could be matched to 598 patients who remained on oETA. At baseline (table 1), in both groups, physical function as well as numbers of prior biologics were similar, whereas patients who remained on oETA were more often autoantibody positive (71% vs. 63%), had more erosions (56% vs. 47%) and more frequently three or more comorbidities (34% vs. 28%) than those who were switched to bsETA.

Table 1: Baseline characteristics of patients who switched to bsETA or stayed on oETA.

	Switcher N=102	Non-Switcher N=598
Age [years]*	59.5 ± 12.7	58.8 ± 11.5
Female patients*	79 (77.5%)	469 (78.4%)
Disease duration [years]	13.6 ± 9.1	13 ± 9.2
Autoantibody positivity (rheumatoid factor or anti-CCP)	59 (59.0%)	420 (70.5%)
DAS28-ESR*	3.2 ± 1.2	3.2 ± 1.3
C-reactive protein in mg/l	8.3 ± 19.6	7.4 ± 13
% of full physical function	68.4 ± 24.4	69.1 ± 24.3
Joint erosions	46 (47.4%)	316 (56.2%)
No. of prior bDMARD therapies	0.4 ± 0.8	0.3 ± 0.7
Therapy with glucocorticoids	53 (52.0%)	366 (62.4%)
Glucocorticoid dosage [mg/d]	4.6 ± 2.2	5.2 ± 3.8
Baseline comorbidities		
None	25 (24.5%)	131 (21.9%)
one	24 (23.5%)	142 (23.7%)
two	24 (23.5%)	121 (20.2%)
three or more	29 (28.4%)	204 (34.1%)

*Numbers are given as mean ± standard deviation, or frequency (N(%)); * Matching criteria*

Treatment discontinuation

Table 2: Reasons for discontinuation of ETA.

Reasons for discontinuation*	Switcher	Non-Switcher
Adverse events	56 %	22 %
Loss of response	35 %	66 %
Non-compliance	9 %	3 %
Pregnancy	4 %	1 %
others	0 %	5 %

After one year, 23% (n=23) of the switcher and 17% (n=99) of the non-switcher had stopped the respective treatment. The main reason for discontinuation was "adverse events" in switchers (n=13, thereof 2 serious events and 1 planned surgery) and "loss of response" in non-switchers (n=65).

**Multiple reasons could be given (percentages can add up to more than 100%).*

Retention Rates

Kaplan-Meier curves showed similar retention rates over 12 months for bsETA and oETA (figure). For month 6 to 12 the curve for switchers is lower than for non-switchers but not significantly different.

Nine bsETA patients were switched back to oETA. The reasons were adverse events in 5 patients, loss of efficacy in 3 and non-compliance in 1 patient.

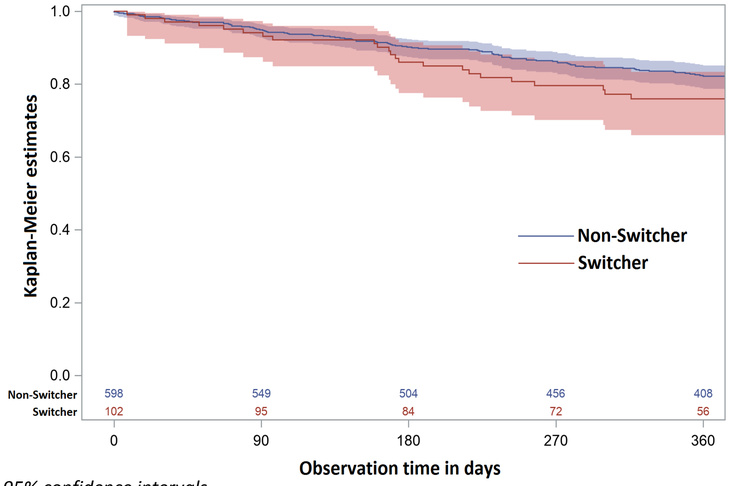

Figure: Treatment continuation with 95% confidence intervals in patients who either stayed on the etanercept originator or switch to the biosimilar SB4.

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