Rheumatoid arthritis patients' perspectives on biological DMARD-induced adverse drug reactions and their burden

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Background

Numerous biological DMARDs (bDMARDs) are used in rheumatoid arthritis (RA) treatment, however detailed knowledge of patients' perceptions on drug use and the impact of adverse drug reactions (ADRs) is sparse.

Objective: To gain insight into bDMARD-induced ADRs and their burden from the RA patients' perspective.

Method

The Dutch Biologic Monitor is a prospective, multicentre, event monitoring cohort model including information collected by online questionnaires from patients using a bDMARD for an immune-mediated inflammatory disease between January 1, 2017 and December 31, 2018. Patients were asked to complete questionnaires bi-monthly about used bDMARDs, indication for the bDMARD and bDMARD-induced ADRs. Patients that used a bDMARD for RA were included in this study. ADRs were coded according to MedDRA terminology and their impact was measured on a 5-point scale, ranging from 1 (no burden) to 5 (very high burden). Every recurrent unique ADR was included as one ADR. ADRs regarding infections, skin, gastrointestinal and injection site were clustered and analysed for the reported prevalence and burden. Fatigue and headache were separately analysed for prevalence and burden. The prevalence of clustered ADRs between the various bDMARDs was compared using a χ^2-test and the average burden was compared using a Mann-Whitney U test.

CONCLUSIONS

- Almost half of the participating RA patients reported bDMARD-induced ADRs.
- Injection site reactions have the highest prevalence with a relatively low burden and bDMARD-induced infections and headaches are less prevalent but give a higher burden.
- Etanercept users experienced more injection site reactions and more gastrointestinal reactions than adalimumab users.

Table 1. Prevalence and burden of analysed adverse drug reactions (ADRs) (n = 583)

	No. of ADRs	Prevalence of ADRs	No. of patients	Average burden* (± SD)
Injection site reactions	129	22.1%	86	1.7 ± 0.8
Fatigue	25	4.3%	25	2.7 ± 1.0
Gastrointestinal reactions	57	9.8%	41	2.9 ± 1.1
Skin reactions	102	17.5%	64	2.9 ± 1.1
Infections	109	18.7%	79	3.3 ± 1.0
Headache	11	1.9%	11	3.4 ± 0.9

* Burden ranging from 1 (no burden) to 5 (very high burden)

Results

Table 2. Comparison of adverse drug reaction (ADR) prevalence between the two most used bDMARDs: etanercept and adalimumab

	Etanercept (n = 265)	Adalimumab (n = 196)	p-value
Injection site reactions	28.7% (76 ADRs)	11.3% (30 ADRs)	0.007
Infections	17.4% (46 ADRs)	18.9% (37 ADRs)	0.675
Skin reactions	14.3% (38 ADRs)	13.8% (27 ADRs)	0.863
Gastrointestinal reactions	11.3% (30 ADRs)	4.6% (9 ADRs)	0.01

In the Dutch Biologic Monitor 583 consecutive (44.8%) RA patients were included (71.2% female, average age 59 years, SD ± 12.4) using the originator or a biosimilar of etanercept (265), adalimumab (196), tocilizumab (41), abatacept (35), certolizumab pegol (23), rituximab (19), infliximab (18), golimumab (15), sarilumab (2), secukinumab (1), anakinra (1). A total of 703 ADRs were reported in 2,559 completed questionnaires. Almost half of the patients (276; 47.3%) reported at least one bDMARD-induced ADR. The prevalence and burden of analysed ADRs is shown in Table 1. The lowest burden was experienced with injection site reactions. bDMARD-induced infections and headaches gave a higher burden. Prevalence of clustered ADRs was compared between etanercept and adalimumab and is shown in Table 2. The perceived burden of gastrointestinal reactions was higher for patients using etanercept than for patients using adalimumab (3.1 ± 1.0 vs 2.0 ± 0.7, p=0.006), but did not differ for other ADRs.

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