Differences between patient-reported and physician-reported adverse drug reactions attributed to bDMARDs

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Background

Patient registries are a valuable tool to monitor a patient's health status. However, these systems operate primarily from the healthcare provider (HCP) perspective, which makes it difficult to collect detailed information on the nature, frequency and personal impact of adverse drug reactions (ADRs).

Objectives

Determining whether the distribution of patient-reported ADRs attributed to bDMARDs differs from ADR registrations by HCPs.

Methods

Patient reported ADRs were derived from the Dutch Biologic Monitor (DBM), a multi-centre cohort event monitoring system based on web-based questionnaires for bDMARD-using patients [1,2]. ADR reports of the Dutch Rheumatic Arthritis Monitoring Registry (DREAM-RA) were used to outline the HCP perspective. ADR reports from foundation up to 31 October 2019 were coded according to MedDRA terminology.

Fisher-Freeman-Halton test with Monte Carlo simulation was used to measure discrepancies between the distributions of High Level Group Terms (HLGT). The prevalence of the top 15 HLGTs were compared using Chi-Square Goodness-of-Fit tests.

Table 1: Patient characteristics

	Dutch Biologic Monitor n=404	DREAM-RA n=341
Age, median (IQR), years	57.0 (49.0-65.0)	56.0 (46.0-65.0)
Female, n (%)	279 (73.5)	240 (70.4)
Indication for bDMARD therapy, n (%)		
Rheumatoid arthritis	299 (74.0)	381 (89.4)
Psoriatic arthritis	105 (26.0)	45 (10.6)
bDMARD use, n (%)		
Etanercept	164 (40.6)	152 (34.9)
Adalimumab	134 (33.2)	119 (44.6)
Tocilizumab	32 (7.9)	48 (14.1)
Other	100 (24.8)	107 (31.4)

Table 2: Distribution of patient- and HCP-reported ADRs

	Patient			HCP	p-value	
HLGT	**Burden (1-5)**	**Reports (%)**	**ADRs discussed with HCP (%)**	**Reports (%)**	**All patient vs HCP reports**	**ADRs discussed with HCP vs HCP reports**
Administration site reactions	1.7	402 (20.3)	93 (11.1)	20 (2.9)	<.001	<.001
Infections - pathogen unspecified	2.9	229 (11.6)	130 (15.5)	93 (13.7)	0.153	0.344
Epidermal and dermal conditions	2.6	218 (11.0)	96 (11.4)	111 (16.3)	<.001	0.007
General system disorders NEC	2.8	175 (8.9)	82 (9.8)	52 (7.7)	0.382	0.172
Gastrointestinal signs and symptoms	2.4	81 (4.1)	17 (2.0)	29 (4.3)	0.824	0.015
Respiratory disorders NEC	2.4	77 (3.9)	33 (3.9)	26 (3.8)	1.0	1.0
Headaches	2.9	55 (2.8)	23 (2.7)	19 (2.8)	1.0	1.0
Joint disorders	3.3	55 (2.8)	32 (3.8)	3 (0.4)	0.093	0.006
Respiratory tract signs and symptoms	2.2	47 (2.4)	22 (2.6)	7 (1.0)	0.039	0.036
Skin appendage conditions	3.0	44 (2.2)	14 (1.7)	12 (1.8)	0.538	1.0
Musculoskeletal and connective tissue disorders NEC	3.1	40 (2.0)	16 (1.9)	4 (0.6)	0.009	0.039
Oral soft tissue conditions	2.4	33 (1.7)	12 (1.4)	7 (1.0)	0.277	0.644
Gastrointestinal motility and defaecation conditions	2.6	29 (1.5)	12 (1.4)	16 (2.4)	0.123	0.186
Ocular infections, irritations and inflammations	3.1	29 (1.5)	22 (2.6)	4 (0.6)	0.106	0.002
Therapeutic and nontherapeutic effects (excl toxicity)	2.9	27 (1.4)	16 (1.9)	3 (0.4)	0.057	0.010
Other	2.9	436 (22.1)	221 (26.3)	273 (40.2)	<.001	<.001

Results

ADR reports of 404 DBM participants (1,977 ADRs) and 341 DREAM-RA patients (679 ADRs) were analysed.

Patients and HCPs reported a different ADR distribution (p<.001). Administration site reactions were most frequently reported by patients, followed by infections and (epi)dermal conditions. HCPs most often reported (epi)dermal conditions, infections and general system disorders. Moreover, the distribution of ADRs that patients allegedly discussed with HCPs varied considerably from the distribution of HCP-reported ADRs (p<.001).

Conclusions

Patients and HCPs report a different distribution of ADRs attributed to bDMARDs. Therefore, patient-reported ADRs should ideally be combined with HCP reports, as the combination of both perspectives gives a more complete picture of a patient's health status.

1. Kosse LJ., *et* al. Patients with inflammatory rheumatic diseases: quality of self-reported medical information in a prospective cohort event monitoring system. *Rheumatol*. 2020 Jun 1;59(6):1253-1261.
2. Van Lint JA, *et al*. Patient-reported burden of adverse drug reactions attributed to biologics used for immune-mediated inflammatory diseases. *Drug Saf*. 2020

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