Factors associated with citation of original articles in 5 high-impact-factor dermatology journals

To the Editor: Citation practices in dermatology research are relatively unexplored.[1] We examined which factors are predictive of citation of original, full-length articles from 2006 to 2008 from 5 high-impact-factor dermatology journals (*Journal of the European Academy of Dermatology and Venereology, British Journal of Dermatology, Journal of Investigative Dermatology, Journal of the American Academy of Dermatology,* and *JAMA Dermatology* (*Archives of Dermatology* before 2013).

Articles were identified from journal electronic websites and information was manually extracted from each article. Our primary outcome was the cumulative number of citations after 10 years, as stated in Web of Science. Data were extracted via the

Table I. Characteristics of original, full-length articles published in 5 high-impact-factor dermatology journals, 2006-2008

Article characteristic	*JEADV*, N = 395 (16%)	*BJD*, N = 696 (28%)	*JID*, N = 810 (33%)	*JAAD*, N = 399 (16%)	*JAMAD*, N = 174 (7%)	Total, N = 2474 (100%)
Disease group, No. (%)						
Psoriasis	65 (8)	48 (12)	94 (14)	14 (8)	51 (13)	272 (11)
Eczema	44 (5)	21 (5)	73 (10)	7 (4)	35 (9)	180 (7)
Neoplasia	151 (19)	76 (19)	144 (21)	52 (30)	48 (12)	471 (19)
Infections	32 (4)	49 (12)	55 (8)	18 (10)	55 (14)	209 (8)
Skin reactions	32 (4)	22 (6)	61 (9)	13 (7)	40 (10)	168 (7)
Skin appearance	141 (17)	77 (19)	92 (13)	32 (18)	69 (17)	411 (17)
Other	345 (43)	106 (27)	176 (25)	38 (22)	97 (25)	763 (31)
Study classification, No. (%)						
Experimental	20 (2)	47 (12)	68 (10)	13 (7)	70 (18)	218 (9)
Basic research	519 (64)	30 (8)	128 (18)	10 (6)	32 (8)	719 (29)
Cross-sectional	132 (16)	183 (46)	244 (35)	61 (35)	130 (33)	750 (30)
Cohort	30 (4)	47 (12)	55 (8)	35 (20)	49 (12)	216 (9)
Case control	100 (12)	39 (10)	117 (17)	20 (11)	61 (15)	337 (14)
RCT	9 (1)	53 (13)	84 (12)	35 (20)	53 (13)	234 (9)
Industry sponsor, No. (%)						
No	356 (90)	642 (92)	799 (99)	341 (85)	153 (88)	2291 (93)
Yes	39 (10)	54 (8)	11 (1)	58 (15)	21 (12)	183 (7)
Intervention, No. (%)						
None	265 (67)	546 (78)	785 (97)	303 (76)	128 (74)	1927 (82)
Treatment	117 (30)	128 (18)	8 (1)	83 (21)	33 (19)	369 (15)
Other intervention	13 (3)	22 (3)	17 (2)	13 (3)	13 (7)	78 (3)
First author continent, No. (%)						
Africa	1	1	5 (1)	1	0	8
South America	10 (3)	10 (1)	12 (1)	7 (2)	1 (1)	40 (2)
Australia	10 (3)	14 (2)	18 (2)	8 (2)	3 (2)	53 (2)
Middle East	15 (4)	44 (6)	55 (7)	17 (4)	15 (9)	146 (6)
Asia	44 (11)	85 (12)	110 (14)	57 (14)	29 (17)	325 (13)
Europe	211 (53)	345 (50)	393 (49)	188 (47)	83 (48)	1220 (49)
North America	104 (26)	197 (28)	217 (27)	121 (30)	43 (25)	682 (28)
Total countries, mean (SD)	1.24 (0.99)	1.39 (1.07)	1.40 (0.76)	1.24 (0.78)	1.39 (1.04)	1.34 (0.92)
Total authors, mean (SD)	5.20 (2.72)	6.19 (2.86)	7.13 (3.29)	5.86 (3.10)	6.83 (4.00)	6.33 (3.18)
Study subjects, median (IQR)	59 (176)	40 (151)	57 (198)	70 (161)	99 (372)	30 (141)

Disease group categories were psoriasis (psoriasis and psoriasis-like diseases), eczema (atopic, seborrheic, hand, irritant/allergic contact, and other eczemas), neoplasia (skin cancer and all other neoplasias, including melanoma), infections (all infections and acne), skin reactions (vasculitis, allergy, hypersensitivity, and other erythematous reactions), skin appearance (alopecia, makeup, skin aging, striae, scars, tattoos, unspecified nail changes, lentigines/nevi [nonrelated to melanoma], melasma, polymorphic light eruption, pigmentation defects, and sun protection), and other (topics unable to be included in the above-mentioned categories, among them investigations on specific cells in vitro, rare genetic syndromes, nondermatologic disease, and general dermatology). Study classification was inspired by the National Institute for Health and Clinical Excellence Guidelines Manual from 2006.[2] A total of 67 articles were uncategorized and excluded from analyses.

BJD, British Journal of Dermatology; *IQR*, interquartile range; *JAAD, Journal of the American Academy of Dermatology*; *JAMAD, JAMA Dermatology*; *JEADV, Journal of the European Academy of Dermatology and Venereology*; *JID, Journal of Investigative Dermatology*; *RCT*, randomized controlled trial; *SD*, standard deviation.

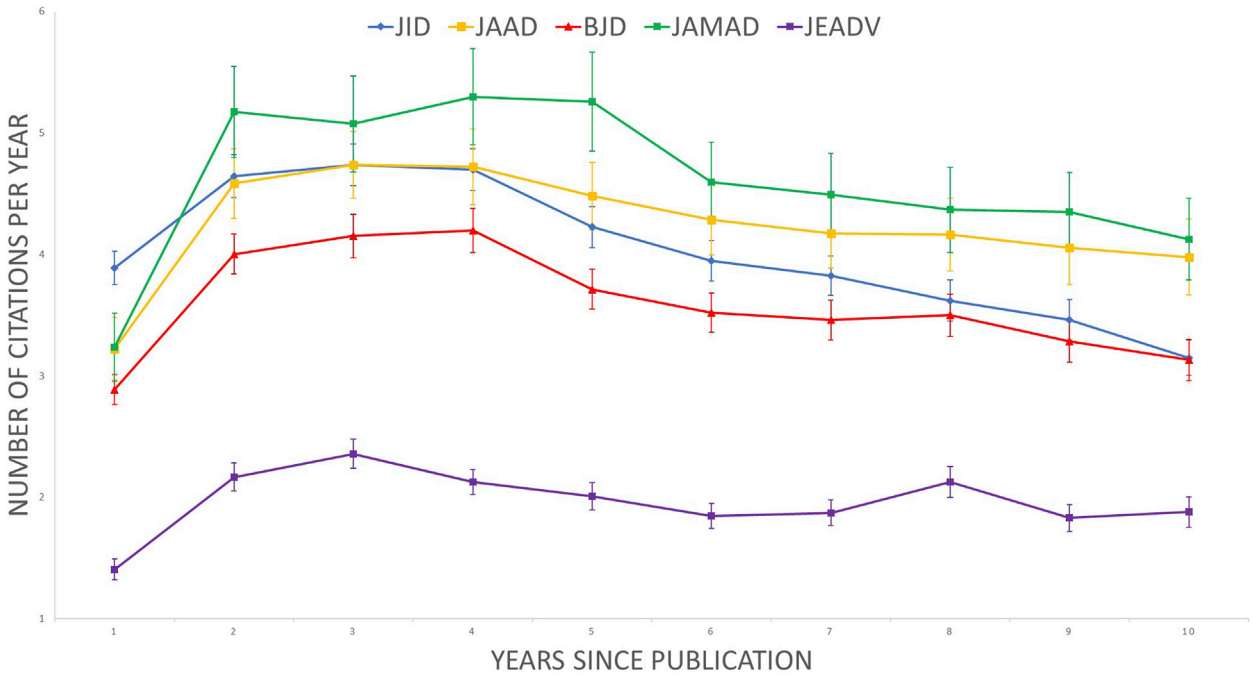

Fig 1. Number of citations of original articles published in 5 high-impact-factor dermatology journals in 2006-2008 in the 10-year period after publication. *BJD, British Journal of Dermatology; JAAD, Journal of the American Academy of Dermatology; JAMAD, JAMA Dermatology* (*Archives of Dermatology* before 2013); *JEADV, Journal of the European Academy of Dermatology and Venereology; JID, Journal of Investigative Dermatology.*

"create citational report" function. A general linear model was constructed in SPSS (version 26, IBM, Chicago, IL) to analyze the mean citation difference (MCD) in the whole 10-year period of the various article categories. The MCD describes the mean number of citations of an article category compared with all other article categories (eg, the mean difference between the number of citations of a psoriasis article compared with articles of all other disease groups). Thereby, we did not arbitrarily reduce 1 category to a reference category.

A total of 2541 articles were identified (Table I). Articles published in *JAMA Dermatology* (MCD 10; 95% CI 4 to 16; $P = .001$), *Journal of the American Academy of Dermatology* (MCD 7; 95% CI 3 to 11; $P = .001$), and *Journal of Investigative Dermatology* (MCD 6; 95% CI 2 to 9; $P = .001$) received on average more citations, whereas *Journal of the European Academy of Dermatology and Venereology* articles received fewer citations (MCD −20; 95% CI −24 to −16; $P < .001$) (Fig 1). Articles about psoriasis (MCD 14; 95% CI 9 to 20), articles with an industrial sponsor (MCD 13; 95% CI 7 to 19), articles based on randomized controlled trials (MCD 12; 95% CI 7 to 18), and articles with a first author from North America (MCD 10; 95% CI 6 to 14), with a larger number of authors (mean increase of 1.6 citations per additional author; 95% CI 1.2 to 2.1), and with more countries represented among the authors (mean increase of 7.1 citations per additional country; 95% CI 5.4 to 8.8) received more citations. In contrast, articles by a first author from a non-European/non-US country (MCD −7; 95% CI −12 to −3), articles describing experimental studies (MCD −7; 95% CI −13 to −1), and basic research studies (MCD −4; 95% CI −7 to 0) received significantly fewer citations. In multivariate analysis adjusted for the mutually related factors psoriasis, randomized controlled trial study design, and North American first author, industrial sponsorship was no longer a significant factor (MCD 5; 95% CI −2 to 12). Descriptions of secondary outcomes are provided in Supplemental Tables I and II and Supplemental Fig 1 (available via Mendeley at https://doi.org/10.17632/fhf2yz82r4.1).

We found the most cited article type within dermatologic research to be a multinational, industrially sponsored, randomized controlled trial of psoriasis from a Western country, which is possibly a result of the expansion era of biologic drugs in this period. If we had conducted the study earlier, results might have been different.[3] Knowledge of citation practices

can be used to monitor research activities in dermatology.

Marius Mølsted Flege, MSc,[a,b] and Simon Francis Thomsen, MD, PhD[a,b]

From the Department of Dermatology, Bispebjerg Hospital, Copenhagen, Denmark[a]; and Department of Biomedical Sciences, University of Copenhagen, Copenhagen, Denmark.[b]

Funding sources: None.

Conflicts of interest: None disclosed.

Correspondence to: Simon Francis Thomsen, MD, PhD, Department of Dermatology, Bispebjerg Hospital, Bispebjerg Bakke 23, DK-2400 Copenhagen NV, Denmark

E-mail: simonfrancisthomsen@gmail.com

REFERENCES

1. Reiter O, Mimouni M, Mimouni D. Analysis of self-citation and impact factor in dermatology journals. *Int J Dermatol*. 2016;55:995-999.
2. National Institute for Health and Clinical Excellence. The guidelines manual, April 2006. https://www.nice.org.uk/. Accessed February 20, 2020.
3. Farley-Loftus R, Farley-Ripple EN, Kundu RV. Assessing the evidence: clinical research trends in dermatology over a 10-year period. *J Am Acad Dermatol*. 2011;64:e15-e16.

https://doi.org/10.1016/j.jaad.2020.05.075

Low prevalence of late-onset neutropenia after rituximab treatment in patients with pemphigus

To the Editor: The autoimmune blistering disease pemphigus is caused by IgG autoantibodies binding to desmosomal autoantigens, most commonly desmoglein (Dsg) 1 and 3, leading to the loss of cellular adhesion[1] and resulting in the formation of blisters and erosions on the skin or oral mucosa, or both. Rituximab (anti-CD20 antibody) is a first-line treatment option,[2] but its use across a range of nondermatologic conditions has been associated with development of late-onset neutropenia (LON), occurring 4 to 48 weeks after treatment, with a prevalence between 1.3% and 29.9%.[3,4] Despite cases of rituximab-associated LON reported in other autoimmune blistering diseases,[5] a systemic evaluation of rituximab-associated LON in pemphigus is lacking.

Thus, we retrospectively identified all patients with pemphigus treated in our department between 2008 and 2019. We identified 161 patients with pemphigus, of which 132 could be included, consisting of 102 with pemphigus vulgaris and 30 with pemphigus foliaceus. Follow-up data were insufficient for 29 patients. Most patients (n = 117) received rituximab treatment (Table I). A total of 209 cycles of rituximab were administered. LON was defined as neutropenia (absolute neutrophil count $<1.5 \times 10^9$/L) 4 to 48 weeks after the last dose of rituximab.

LON was identified in 5 of 117 rituximab-treated patients and in 0 of 15 patients treated without rituximab. Indeed, LON was observed after 6 of 209 rituximab cycles. In more detail: LON developed in a 76-year-old woman (pemphigus foliaceus) after 95 days (lowest point [nadir] of absolute neutrophil count: 0.73×10^9/L), which lasted 6 days. Co-medications included mycophenolate mofetil, citalopram, and mirtazapine.

LON developed in the second patient, a 37-year-old woman (pemphigus vulgaris), 290 days after rituximab, prompting the substitution of azathioprine with mycophenolate. LON developed in the third patient, a 61-year-old woman (IgA pemphigus), 123 days after rituximab (nadir 1.42×10^9/L). Co-medications included dapsone, acitretin, intravenous immunoglobulin, torsemide, and simvastatin.

LON developed in patient 4, a 57-year-old man (pemphigus vulgaris), 127 days after rituximab (nadir 1.43×10^9/L), which lasted 1 day. LON developed after subsequent rituximab therapy; 114 days after the last administration of rituximab (nadir 0.83×10^9/L, duration 21 days). The interval between the rituximab cycles was 6 months. The extent to which rituximab-associated LON may predispose to LON in subsequent treatment cycles, potentially with increased severity, is unclear, but retreatment warrants increased laboratory and clinical surveillance. Patient 4 was also receiving entecavir for hepatitis B and mirtazapine for fibromyalgia. However, the temporal relationship between the rituximab treatment and the neutropenia suggested rituximab as the causal agent.

The final case of LON was observed in a 68-year-old woman (pemphigus foliaceus), which developed after 193 days. Again, azathioprine treatment was substituted with mycophenolate mofetil due to the neutropenia.

LON occurring after rituximab in our cohort did not require specific therapy (antibiotics, granulocyte-colony stimulating factor) or hospitalization, and LON