Faculdade de Ciências Médicas e da Saúde de Juiz de Fora; approval #3.292.404.

Keywords: alopecia; female; hypertrichosis; minoxidil; oral.

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Conflicts of interest

None disclosed.

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https://doi.org/10.1016/j.jaad.2022.01.017

Treatment of immune checkpoint inhibitor–mediated psoriasis: A systematic review

To the Editor: Immune checkpoint inhibitors (ICIs) have revolutionized the treatment of advanced/metastatic cancers.[1] Because ICIs augment Th1/Th17 cell activity and interleukin (IL) 17A secretion, ICI-induced de novo psoriasis and exacerbations of pre-existing psoriasis of diverse phenotypes have been widely reported.[1,2] Although many efficacious treatments exist for idiopathic psoriasis, recommendations for managing ICI-mediated psoriasis are insufficient and notably absent from the National Comprehensive Cancer Network guidelines for treating immune-related adverse events.[3] To support future recommendations, we systematically reviewed the treatment of ICI-mediated psoriasis.

Following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines, studies reporting psoriasis among ICI-treated individuals were identified in PubMed and Embase in December 2020 (PROSPERO ID: CRD42021226337). The search strategy/criteria are provided (Supplementary Fig 1, available via Mendeley at https://doi.org/10.17632/x2bpr9kcb7.1).

Among 1393 references, 60 studies were included (Supplementary Fig 2, available via Mendeley at https://doi.org/10.17632/x2bpr9kcb7.1), yielding 242 patients with individual/near-individual–level data (mean age 67.3 years; 77.3% men; 82.8% anti–programmed death-1 monotherapy) (Supplementary Table I, available via Mendeley at https://doi.org/10.17632/x2bpr9kcb7.1). This cohort included 55.0% (120/218) de novo psoriasis and 45.0% (98/218) cases with preexisting psoriasis; 24 other cases were not specified. The mean pretoxicity ICI cycles (overall, n = 8.8) were fewer in cases of pre-existing psoriasis (n = 6.4) than in cases of de novo psoriasis (n = 9.9). Psoriasis vulgaris was the most reported phenotype (70.6%), followed by palmoplantar (38.3%), nail (28.6%), and guttate (21.4%) psoriasis.

Topical steroids were the most frequently delivered treatment (181/218, 83.0%), which most patients received as monotherapy (111/218, 50.9%). Other agents included acitretin (39/219, 17.9%), systemic steroids (35/218, 16.1%), phototherapy (20/218, 9.2%), and methotrexate (14/218, 6.4%). Biologics-treated cases (9/218, 4.1%) are detailed separately (Supplementary Table IV, available via Mendeley at https://doi.org/10.17632/x2bpr9kcb7.1).

Patients who received topical steroid monotherapy had a reduced rate of permanent ICI discontinuation (12.9% vs 31.5%, $P = .002$). Patients who received systemic steroids more frequently achieved complete/partial response compared with those who did not receive systemic steroids (100.0% vs 82.9%, $P = .017$), but they were more likely to have ICIs permanently discontinued (59.3% vs 22.6%, $P < .001$). The outcomes per treatment are provided (Supplementary Table II, available via Mendeley at https://doi.org/10.17632/x2bpr9kcb7.1). Overall, most patients experienced a partial (113/197, 57.4%) or complete (59/197, 29.9%) response. Most patients had ICI treatment continued without interruption (119/205, 58.0%), but 47 (22.9%) patients had ICIs permanently discontinued.

In this systematic review of ICI-mediated psoriasis treatment, we identified a reduced rate of ICI discontinuation among patients treated with topical steroid monotherapy, likely confounded by toxicity severity. All patients treated with systemic steroids

demonstrated response, but most ultimately experienced permanent ICI discontinuation. Although steroids are frequently recommended and used by oncologists for managing immune-related adverse events across organ systems, we emphasize that systemic corticosteroids are not recommended in the American Academy of Dermatology-National Psoriasis Foundation management guidelines for idiopathic psoriasis, given the lack of durable efficacy without significant side effects and flares upon tapering.[3,4] Systemic steroids may additionally dampen the ICI-driven anti-tumor effect.[1,2] Our clinical opinion favors using nonimmunosuppressive options (ie, acitretin, phototherapy) or highly specific psoriasis-directed biologics for cases refractory to topical steroid monotherapy, given that reduced tumor expression of key psoriasis pathway mediators (tumor necrosis factor, IL-23A, IL-17A) does not affect overall survival across most tumor types.[5]

The limitations include using predominantly observational data, invoking reporting bias and publication bias. Despite our male skew, the predominance of melanoma/lung cancer and anti–programmed death-1 monotherapy is consistent with the general ICI-treated population as previously reported.[1,2] These data support the establishment of consensus-driven expert recommendations for the treatment of ICI-mediated psoriasis.

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Funding sources: Dr LeBoeuf is supported by NIH/NCI grant U54CA225088.

IRB approval status: Reviewed and approved by the Mass General Brigham Institutional Review Board (2015P001336).

Key words: acitretin; apremilast; biologics; corticosteroids; CTLA-4; immune checkpoint inhibitor; immune-related adverse events; irAEs; methotrexate; phototherapy; PD-1; PD-L1; psoriasis; systematic review; treatment.

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Conflicts of interest

Dr Merola is consultant and/or investigator for AbbVie, Aclaris, Almirall, Arena, Avotres, Biogen, Celgene, Dermavant, Eli Lilly, EMD Serono, Incyte, Janssen, LEO Pharma, Merck, Novartis, Pfizer, Regeneron Pharmaceuticals Inc, Sanofi, Sun Pharma, and UCB. Dr LeBoeuf is a consultant and has received honoraria from Bayer, Seattle Genetics, Sanofi, Silverback, and Synox Therapeutics, outside the submitted work. Authors Said, Mita, Dr Elman, and Dr Perez-Chada have no conflicts of interest to disclose.

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https://doi.org/10.1016/j.jaad.2022.02.030

Topical Janus kinase-signal transducers and activators of transcription inhibitor tofacitinib is effective in reducing nonatopic dermatitis chronic itch: A case series

To the Editor: Chronic and refractory pruritus is a highly common complaint among patients with dermatologic conditions and remains difficult to treat with current drug therapies. In particular, there is an unmet need for potent topical antipruritics. The Janus kinase (JAK) 1/3 inhibitor tofacitinib significantly decreases itch-associated interleukin 22, 23, and 31 levels and may rescue inhibitory itch mechanisms via increased peptidergic epidermal nerve fiber density, making it a good candidate for the treatment of chronic and refractory pruritus.[1]