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JAK inhibitors appear to have a bright future in the treatment of atopic dermatitis

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Linked Article: Nakagawa et al. *Br J Dermatol* 2018; **178**:424–432.

We are entering an exciting new era in the treatment of atopic dermatitis. Several novel therapeutic agents, including a first biologic, have been approved recently or are in the late stages of clinical development for this indication. This is reminiscent of the time when biologics first became available for the treatment of psoriasis 15 years ago. One important difference between the two situations is that development of new systemic and topical agents for atopic dermatitis is occurring in parallel. This was not the case when biologics first became available for the treatment of psoriasis. Currently, topical corticosteroids, vitamin D analogues and, in certain countries, tar preparations are still the most frequently used topical agents for patients suffering from more localized forms of psoriasis.

Following early reports of successful treatment of atopic dermatitis with topical tofacitinib, there has been a growing interest in the development of Janus kinase (JAK) inhibitors for atopic dermatitis.¹ In the current issue of the *BJD*, Nakagawa et al. report on the safety and efficacy of a 4-week treatment with JTE-052, a topical pan-JAK inhibitor, in patients with moderate-to-severe atopic dermatitis in the adult Japanese population.² They conducted a placebo-controlled dose-ranging study on 327 patients which included an open-label tacrolimus arm. The study demonstrated that JTE-052 was efficacious for the treatment of atopic dermatitis with 54.4% of patients achieving modified Eczema Area and Severity Index (mEASI) 75 at the end of treatment with the 3% formulation. As typically seen in trials with JAK inhibitors conducted in patients with atopic dermatitis, pruritus improved very rapidly. The safety profile appears to be good, but the data were limited by the small number of treated patients and the short duration of the trial.

One of the limitations of the Nakagawa et al. study is the open-label nature of the tacrolimus arm; investigators knew which patients were on tacrolimus, making efficacy comparisons between tacrolimus and the JTE-052 formulations difficult.^{3–5} Additionally, patients were allowed to use rescue medication (prednisolone valerate acetate) during the study. This

complicated the evaluation of efficacy as some patients received topical corticosteroids in addition to JTE-052. The use of rescue medication was especially high in the vehicle group where more than 40% of patients received topical corticosteroids.

Efficacy and safety data of phase II studies with three different orally administered JAK inhibitors have recently been made available. All three JAK inhibitors have shown very good efficacy for the treatment of atopic dermatitis. These results coupled with other previously published studies and the current Nakagawa et al. study confirm the high efficacy of JAK inhibitors for atopic dermatitis, suggesting a bright future for this class of topical therapy for this indication.

Conflicts of interest

R.B. is an investigator, consultant, advisory board member, speaker for and/or receives honoraria from Antiobix, Aquinox Pharma, Asana, Astellas, Brickell Biotech, Dermavant, Dermira, Dignity Sciences, Galderma, Glenmark, GSK-Stiefel, Hoffman-LaRoche Ltd, Leo Pharma, Neokera, Pfizer, Regeneron and Vitae. R.B. is also a shareholder of Innovaderm Research.

Innovaderm Research Inc., 1851 Sherbrooke
East Street, Suite 502, Montreal, QC H2K
4L5, Canada

E-mail: rbissonnette@innovaderm.ca

R. BISSENETTE

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