

A new era in the treatment of atopic dermatitis

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We are on the verge of major breakthroughs in the treatment of atopic dermatitis. We already have many topical therapies, and newer ones in the form of aryl hydrocarbon receptor modulating agents and topical Janus kinase (JAK) inhibitors are on the way.^{1,2} Injectible biologic therapies like dupilumab have already dramatically changed the way we treat atopic dermatitis, and two new anti-interleukin (IL)-13 biologics, lebrikizumab and tralokinumab are in development, as is an antibody, nemolizumab, directed against the itch cytokine, IL-31.^{3–6} An anti-IL-17C antibody in early development has shown great promise, and a single-dose study of KPL-716, an antibody that simultaneously inhibits IL-31 and oncostatin M signalling, has produced dramatic improvement. Tezepelumab, a monoclonal antibody that targets thymic stromal lymphopoietin, and bermekimab, a monoclonal antibody targeting IL-1 α , are also on the therapeutic horizon.

The need for safer and more effective oral therapy remains our biggest unmet challenge, particularly in a disease that so commonly affects children who fear injectible medications. While there are several oral therapies available for atopic dermatitis such as ciclosporin, methotrexate, mycophenolate mofetil and azathioprine, all require extensive monitoring; all have significant side-effects like nephrotoxicity, hepatotoxicity and bone marrow toxicity; and most are not approved for this indication.

ASN002 and other oral JAK inhibitors such as upadacitinib and baricitinib may fill this unmet need.^{7,8} In the clinical trial published in this issue of the *BJD* by Bissonnette et al., the 40-mg daily dose was most effective and very rapid, with improvement in itch as early as day 2.⁷

However, safety must still be addressed as this study included only small numbers of patients treated for only 28 days. We cannot forget that tofacitinib was shown to be effective for psoriasis, but because of concern over side-effects like herpes zoster, it was not pursued for that disease, even though it is approved in the U.S.A. for psoriatic arthritis.⁹ ASN002 is a broadly acting JAK inhibitor, inhibiting JAK 1, 2 and 3, and TYK2. The tofacitinib comparison is particularly appropriate for a disease like atopic dermatitis where we lack safe and effective oral therapies. Moreover, tofacitinib has proven effective in many orphan diseases like cutaneous sarcoidosis and chilblain lupus, not to mention common conditions like alopecia areata, atopic dermatitis

and vitiligo for which we currently do not have effective therapies.¹⁰

If proven safe in larger, longer-term trials, ASN002 and other JAK inhibitors would be a boon to patients with atopic dermatitis and other inflammatory diseases.

Conflicts of interest

None to declare.

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