What's New in Dermatology?

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This article aims to discuss some of the most important developments in dermatology over the past few years that may be relevant to the family practice setting. Overall, 15% to 30% of problems that FPs face are dermatological.

The objectives are to:

- Recognize the changes occurring in dermatology, as they pertain to treatment options and ongoing management for a number of skin diseases
- Consider the impact of skin disease on patients and employ effective treatment strategies

Atopic dermatitis and the filaggrin gene

It was previously known that mutations in the filaggrin gene (FLG) lead to ichthyosis vulgaris. However, it is also thought that these mutations may be a strong predisposing factor for atopic dermatitis (AD) and more severe asthma in patients with AD.[1]

Although the precise etiology of atopic dermatitis is not known, environmental and genetic factors may play a role. Recently, filaggrin has been implicated as a major gene for AD. Studies suggest that FLG mutations are present in 20% to 50% of patients with AD, depending on the severity, compared to < 10% in the general population.[2-4]

The stratum corneum is the main barrier structure of the epidermis. Filaggrin binds keratin filaments, allowing proper assembly of the stratum corneum. FLG is found on chromosome 1q21 in a region known as the epidermal differentiation complex.[5]

Loss-of-function mutations in FLG have also been associated with severe alopecia areata (AA) in patients with atopic disease.[6]

Comorbidities and psoriasis

Recent studies are looking more into the complete disease burden of psoriasis, including psychosocial aspects, rather than solely focusing on the skin. A number of diseases have been associated with psoriasis including:

- Obesity
- Metabolic syndrome
- General CV risk
- Immune-mediated inflammatory disorders:
  - Psoriatic arthritis
  - Ankylosing spondylitis
  - Crohn's disease
  - Ulcerative colitis
- Infections
- Malignancies
- Social, psychological and behavioural disorders:
  - Depression
  - Alcohol use
  - Nicotine use

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Further studies have linked severe psoriasis with an increased risk of death.[7] They may have a 50% increased risk of death compared to patients with no psoriasis. However, patients with mild psoriasis do not seem to have an increased risk of death.

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What action should we take?

- Initiate treatment that will clear the patient's skin
- Monitor the patient for comorbidities

Despite strong motivation to treat patients with psoriasis, recent data suggest psoriasis patients are undertreated.[8] Results of the National Psoriasis Foundation Survey show that amongst patients with severe psoriasis:

- 39% are not receiving treatment
- 35% are being treated with topical therapy alone
- 26% are being treated with systemic or phototherapy or both

Results also indicated that:

- 78% of patients were frustrated with current treatments
- 32% of patients felt their treatment was not aggressive enough

This level of patient dissatisfaction with traditional therapies further fuels the rationale for using biologic therapies to treat psoriasis.[9]

Therapy for pediatric psoriasis

A recent study suggests that the TNF-α inhibitor, etanercept, is well-tolerated and highly efficacious in the pediatric population with psoriasis.[10] The study involved 211 patients with psoriasis between ages four to 17 years.

Table 1
Biological therapies and their management

Medication	Management
Infliximab	Continue or hold any infusions occurring 1 week prior to surgery and 1-2 weeks after
Etanercept	Hold doses on weeks of procedure and 1-2 weeks after
Adalimumab	No data; hold any doses occurring week of procedure and 1-2 weeks after
Alefacept	No data; continue or hold 1 week prior to and after procedure
Efalizumab	No data; continue or hold 1 week prior to and after procedure

Biological therapies for psoriasis

Biological therapies for treating psoriasis include TNF-α inhibitors (adalimumab, etanercept, infliximab), a CD2 blocker (alefacept) and a CD11a inhibitor (efalizumab) (Table 1).

- No live vaccinations:
  - If a necessity (*e.g.*, foreign travel), biologic must be stopped one month prior to vaccine and for one month after vaccination
- Other vaccines (*e.g.*, influenza) may not be effective
- Biologic therapy may have to be interrupted for:
  - Pregnancy
  - Febrile infections (*e.g.*, cellulitis)
  - Surgery

Cutaneous warts

Treatment is often challenging and frustrating for patients and physicians alike. Studies are also difficult due to the self-resolving nature of cutaneous warts. Recent studies have re-evaluated the use of cryotherapy, duct tape, salicylic acid and topical imiquimod.

Cryotherapy, although often used in adults, is quite uncomfortable for patients, especially in children. It is generally not a good option if there are multiple warts to be treated. Several means of cryotherapy are possible: liquid nitrogen (-196ºC), dimethyl ether and propane mixture (-57ºC), ethylene glycol and contact cryotherapy using a Peltier element (predominantly used in Europe).

Duct tape has previously been reported to be effective, however, more recent data suggest otherwise.[11,12] In a randomized-controlled trial involving 80 adult patients followed for six months, duct tape was not effective. Similarly, a study involving > 100 children comparing duct tape to placebo showed no benefit.

Salicylic acid, however, has been shown to be more effective than placebo in many trials.[13] Overall, it can cure warts in > 70% of cases.

Imiquimod is a topical immunomodulating agent approved for treating genital warts, actinic keratoses and superficial basal cell carcinoma. It has antiviral and antitumour effects by stimulating the production of various cytokines (*e.g.*, INF-γ, IL-1, IL-6, TNF-α) via the activation of Toll-like receptor 7.

It was first approved for treating genital warts. It is not approved for treating non-genital warts, but has been used "off-label" for this indication. Small studies have looked at its effectiveness after other therapies have failed or in immunocompromised patients with success rates ranging from 30% to 36%.[14,15]

Its effectiveness on non-genital warts is limited by poor cutaneous absorption. It may be more effective when used as an adjunct with destructive modalities (*e.g.*, salicylic acid, cryotherapy) and/or occlusion. Main drawbacks to using imiquimod include local reactions (*i.e.*, erythema, pain, scaling) and cost compared to alternatives.

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For references and resources, please contact **cme@sta.ca**

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