

Acne, Rosacea and Psoriasis

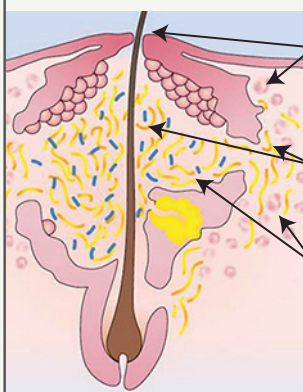
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Acne

Acne is an inflammatory disorder of pilosebaceous units. The characteristic lesions are open (black) and closed (white) comedones, inflammatory papules, pustules, nodules, cysts, and potentially scarring. Skin with sebaceous glands is affected, i.e. mostly face and trunk. Common differential diagnosis of acne includes folliculitis, perioral dermatitis, seborrheic dermatitis, and rosacea. Etiology of acne is multifactorial and includes abnormal follicular keratinization, increased sebum production secondary to androgens, *Propionibacterium acnes* (*P. acnes*) bacteria proliferation, and inflammation.

Acne management options depend on acne type and severity, and the goal of therapy is to manage as many pathogenic factors as possible. Topical therapies include topical retinoids (e.g. adapalene formulations such as Differin and tretinoin formulations such as Retin-A), benzoyl peroxide (e.g. Benzac), topical antibiotics (e.g. Clinda-T), and combination products. An important issue with acne therapy is the development of antibiotic resistance. According to current treatment guidelines from the Global Alliance to Improve Outcomes in Acne Group, the combination of topical retinoid and antimicrobial agent is the first-line therapy for acne, used both as initial therapy and maintenance. Specifically, adapalene and benzoyl peroxide combination (Tactuo gel) is an effective monotherapy for the major acne factors (abnormal desquamation, *P. acnes* colonization, and inflammation), which is antibiotic-free and avoids resistance development.

Topical acne therapies mechanisms of action



Topical retinoids

- Normalize follicular desquamation
- Reduce inflammatory response

Benzoyl peroxide (BPO)

- Kill microorganisms
- Reduce inflammatory response

Topical antibiotics

- Reduce inflammatory response
- Reduce microorganisms

Systemic acne therapies include oral antibiotics (e.g. tetracycline-family), hormonal therapies for women (e.g. oral contraceptives, spironolactone), and isotretinoin. Physical treatments include comedone extraction, chemical peels, microdermabrasion, lasers and photodynamic therapy. Intralesional injections of corticosteroids may be used for temporary treatment of nodules & cysts. Injectable fillers and laser resurfacing, as well as subcision and microneedling can improve the appearance of scarring.

Using a mild cleanser rather than soap, not picking the skin, and a low-glycemic diet and possibly dairy reduction in some patients can be useful adjuncts.



Rosacea

Rosacea is an acneiform disorder of facial pilosebaceous units and vasculature. It predominantly affects 30-50 year olds, with a female preponderance. Rosacea is characterized by flushing, erythema, telangiectasia, papules and pustules. Four major subtypes exist: erythematotelangiectatic ("vascular"), papulopustular, ocular, and phymatous. Notably, the complications of rosacea include ocular involvement (e.g. blepharitis) and development of rhinophyma (enlarged nose), especially seen in males. The differential diagnosis of rosacea includes acne, folliculitis, perioral dermatitis, and malar rash of lupus erythematosus. Rosacea can be triggered by heat (e.g. shower, hot drinks), spicy foods, sunlight, cold, alcohol, and stress, and hence preventative measures should be emphasised to the patient.



Topical antimicrobials (e.g. metronidazole formulations Metrogel 1% and Noritate 1% and azelaic acid formulation Finacea) and oral antibiotics are commonly used for rosacea. Importantly, unlike acne, rosacea is mostly inflammatory rather than a bacterial condition. Antibiotic level doses of tetracyclines are used for their anti-inflammatory effect but do not offer a safe long term option given the risk of antibiotic resistance. A new once daily rosacea systemic treatment available in Canada is a sub-antimicrobial dose doxycycline (Apprilon 40 mg: 30 mg immediate and 10 mg delayed release) which can be used as monotherapy or in combination with a topical regimen. Apprilon has not shown to encourage the development of bacterial resistance. Laser or light-based therapy is the currently the best treatment modality for erythema and telangiectasia as current prescription treatments are only effective for the papulopustular subtype of rosacea. New topical anti-redness prescription products are coming to market very soon. Other therapeutic options include low-dose isotretinoin for severe cases and clonidine for flushing. Ophthalmologic care may be needed for ocular involvement.

Psoriasis

Psoriasis is a chronic scaly dermatosis which affects 1-3% of population. The etiology of psoriasis is multifactorial and includes a genetic component, HLA associations and a cytokine inflammatory cascade. Characteristic well-defined erythematous plaques with silvery-white scale are typically distributed over extensor surfaces (elbows, knees), scalp, sacrum, umbilicus and other sites in psoriasis. Common differential diagnosis includes eczema, seborrhea, tinea, lichen planus, Bowen's disease, and pityriasis rosea. It is important to consider and potentially screen for co-morbidities known to occur in patients with psoriasis: i.e. metabolic syndrome, cardiovascular disease, stroke, depression and anxiety. Up to 25% of patients with psoriasis also have associated psoriatic arthritis, most commonly of the small joints of the hands and feet.

Topical treatments for psoriasis include topical steroids (various potencies and vehicle formulations), vitamin D analogues (e.g. calcitriol formulation Silkis and calcipotriol formulation Dovonex), combination products (e.g. Dovobet), tar and salicylic acid preparations, topical immunomodulators (e.g. Protopic ointment and Elidel cream; mainly for inverse and facial psoriasis) and intralesional steroids.

According to psoriasis treatment guidelines and much evidence, psoriasis patients commonly undertreat themselves and compliance is a paramount issue in therapy. Patients with thick body and scalp psoriasis plaques often require treatment with the highest potency corticosteroids to gain quick results. E.g. Clobex spray formulation of potent clobetasol steroid can lead to high compliance and better outcomes as it is not greasy, dries quickly, and has a fast-onset of action.

Phototherapy is an effective treatment modality, especially for widespread psoriasis. It is covered by OHIP and e.g. available at the Toronto Dermatology Centre. Systemic treatment options for psoriasis are divided into older immunosuppressive therapies such as methotrexate and cyclosporine, and the oral retinoid Soriatane, as well as currently widely used biologic therapies, which are specifically targeted to psoriasis immunopathogenesis and include etanercept (Enbrel), ustekinumab (Stelara), adalimumab (Humira), and infliximab (Remicade). New systemic agents including oral biologics and even biologic generics are on the horizon. As well, psoriasis is a very active area of research, with many ongoing clinical trials.



Toronto Dermatology Centre specialty clinics:

- Acne & rosacea clinic
- Skin cancer clinic
- Psoriasis clinic
- Warts & molluscum clinic