

Rosacea—A Brief Review of Clinical Presentation and Treatment

a report by

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Rosacea is divided into four broad variants: erythematotelangiectatic, papulopustular, phymatous, and ocular.¹⁻⁴ Sub-variants of rosacea exist and include rosacea fulminans,²⁴ granulomatous rosacea,¹⁹ and perioral dermatitis.¹ Solid facial edema can be a variant of rosacea.²¹ These variants can occur in isolation or overlap.^{1,20} The differential diagnosis of rosacea include acne, polycythemia vera, connective tissue diseases (for example lupus), photosensitivity disorders, contact dermatitis, carcinoid, mastocytosis, and the long-term application of topical steroids. Rosacea is a complex disease that affects many people and for which a variety of treatment strategies have been attempted, of which none yet are consistently curative.

Rosacea displays a variety of physical findings that include stable erythema, erythematous flushing, blushing, telangiectasias, erythematous papules, granulomatous (more flesh-colored) papules and pustules, and, in areas affected by rosacea for extended durations, yellow-orange-colored plaques (phymas) most commonly on the nose (rhinophyma), but which can occur on other areas of the face, and ocular rosacea (which affects 6–18% of patients with rosacea).^{1,17} Manifestations of ocular rosacea include meibomian gland dysfunction, blepharitis, lid margin telangiectasia, punctate superficial keratopathy, conjunctival hyperemia (with or without inferior corneal vascularization), eyelid lymphedema, keratitis, and keratoconjunctivitis sicca.¹⁷

Rosacea tends to wax and wane over the short-term (days, weeks, months), but can worsen in the longer-term (years). It has a variety of triggers, for example stimuli that bring out or worsen the intensity of the appearance of rosacea.^{1,20} Foods that can be triggers for rosacea include vanilla, soy sauce, spicy foods, hot peppers, chili peppers, cheese (except cottage cheese), and chocolate. Temperature is also an important trigger for rosacea and heat sources such as sauna heat, heating during exercise, sun lamps, and hot summer days can trigger or worsen rosacea. Drinks such as red wine, hot tea, hot coffee, and alcohol can lead to a rosacea outbreak. Elements of the weather (e.g. sun, heat, winter wind, and the cold) can induce or worsen rosacea. Emotional fluctuations such as anger, stress, rage,

embarrassment, or anxiety can lead to rosacea. Medications that may lead to flushing or vasodilatation can worsen rosacea and include niacin, nitroglycerin, and other vasodilators. Irritating topical medications such as retinoids, cosmetics, acetones, and alcohol can cause rosacea to flare. Very importantly, while topical corticosteroids may initially calm rosacea, attempts to withdraw them can lead to rebound recurrence. Topical corticosteroids should be avoided in the treatment of patients with rosacea, even if their skin is irritated.

Patients who have rosacea generally share a common history. They often complain of flushing, blushing, and sensitive skin, and in particular that their skin is irritated by topical preparations.^{1,20} Rosacea has a substantial psychosocial impact on the lives of patients. Rosacea's epidemiology has been defined in a few sources.³ It is a disease of young, middle-aged and elderly adults, but uncommonly affects children.

Most common in fair-skinned northern and western European Caucasians, rosacea incidence is higher in countries like Canada, Australia, New Zealand, the US, and Western Europe. In persons aged 20–60, a Swedish survey estimated a 10% prevalence of rosacea, with a three-to-one incidence in women compared with men.³

In the US, it is estimated that 10–20 million people have rosacea, the majority of who are women. A larger group will experience simple, non-progressive flushing from a variety of triggers, in particular the drinking of alcohol.^{1,20}

Various treatments exist to treat the papules and pustules, and to some extent the erythema, of rosacea.⁴⁻⁶ Treatments improve the appearance and psychological well-being of patients but are not curative. Based on the needs and type of rosacea of the patients, treatment with topical metronidazole is usually the first line of therapy. Topical clindamycin and erythromycin contained in lotions and gel are useful as well.

Other mainstays of rosacea treatment include topical lotions and creams that contain sulfur. Sulfur products

often provide a soothing, non-irritating means of cleansing the skin. Another topical medication that can effectively treat rosacea is azelic acid, which seems more efficacious as a gel than as a cream.

Tetracycline-type antibiotics are very useful agents in the treatment of rosacea and include tetracycline, doxycycline, and minocycline (which seems to be most effective). Typical dosing for tetracycline is 500mg twice a day, doxycycline 50–100mg twice-daily, and minocycline 50–100mg twice a day.

Newer versions of the old antibiotics might be helpful in treating rosacea. A new version of controlled-release minocycline dosed at 100mg daily has been approved by the US Food and Drug Administration (FDA) for the treatment of acne and is very promising for the treatment of rosacea.²⁵ Recently, submicrobial dosing of doxycycline 40mg daily or 20mg twice-daily has been advocated as effective therapy and received FDA approval at the dose of 40mg daily. Submicrobial dose doxycycline is a promising medication.

Topical and oral medications tend not to be as useful for treating the erythema of rosacea. Newer light treatments, with intense-pulsed light and long-pulsed dye lasers, seem to be effective at decreasing rosacea's erythema and eliminating rosacea's telangiectasias, but they are expensive and usually do not permanently eliminate erythema or telangiectasias.¹⁶

The application of tacrolimus and pimecrolimus to the face of rosacea patients found decreased erythema, but the package insert warnings must be considered when considering such a course of

treatment.⁴⁻⁶ 'Steroid rosacea' has been linked to the use of tacrolimus and pimecrolimus.

Certain subtypes of rosacea require special types of treatment. Phymatous types can be treated with dermabrasion and CO₂ laser. Ocular rosacea can be treated with anti-inflammatory, antibiotic, and sulfur eye-drops.¹⁷ Sometimes, therapy is not effective or too difficult to comply with. In such cases, other treatment options do exist. Cosmetic camouflage aids rosacea patients who do not want therapy or for whom the effect of therapy is sub-optimal.

A sub-variant of rosacea, which manifests as multiple erythematous papules, pustules, nodules, and purulent discharging cysts, is known as rosacea fulminans. This can be treated by prednisone 0.5–1mg/kg, followed by oral isotretinoin. Granulomatous rosacea, which manifests as firm, flesh-colored papules—in particular in people of color—is likely caused by the same entity as *lupus miliaris disseminatus faciei*. Perioral dermatitis (which may manifest on the chin, upper lip and cheeks) occurs most commonly in adult females and manifests with erythematous papules around the mouth sparing the lips and the skin around the lips (which appears pale). It is best treated with oral tetracyclines.

Rosacea is a skin disease, the origins of which remain to be fully defined. It would seem to be a common condition with many presentations and a multi-factorial etiology. New treatments, which include submicrobial-dose doxycycline, extended-release minocycline, and laser and visible light treatments, are promising ways to improve the appearance of rosacea patients. A true cure or remittive treatment for rosacea, however, remains an unmet medical need. ■

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