Acne rosacea: non-contagious, chronic skin disorder characterized by recurrent flushing (transient erythema) & persistent redness (erythema) of central face

Phases of rosacea

1. Pre-rosacea phase: embarrassing flushing, blushing & stinging (triggers); persist throughout the other phases
2. Vascular phase: facial erythema & edema with multiple telangiectasias (persistent vasomotor instability)
3. Inflammatory phase: sterile papules & pustules
4. Late phase: coarse tissue hyperplasia (fibrosis) of the cheeks and nose (rhinophyma) caused by tissue inflammation, collagen deposition, and sebaceous gland hyperplasia

➢ Usually sequential but can bypass earlier stages

Subtypes of acne rosacea

1. Erythematotelangiectatic rosacea: persistent central erythema; prolonged flushing; telangiectasia, roughness (scaling); burning or stinging possible (topical agents)
2. Papulopostular rosacea: persistent erythema of central face with small papules & pinpoint pustules; NO comedones; burning, stinging, flushing possible; episodes of facial edema
3. Phymatous rosacea: skin thickening & irregular nodularities of nose, chin, ears, forehead or eyelids; rhinophyma
4. Ocular rosacea: watery, bloodshot eyes, dry eyes, foreign body sensation, irritation, photophobia; blepharitis, conjunctivitis, scleritis, keratitis, eyelid irregularities, inflammation; vision loss possible

Epidemiology

- 2 million Canadians (10%)
- Adults age 30-50 yo; any skin type (frequently Euro-Caucasian)
- More women affected; men more severe
- Affects persons who easily flush/blush; sensitive skin
- Chronic skin condition that doesn't go away (can be controlled)
- Often misdiagnosed as acne

Grading primary features of rosacea

- 0-3 scale: absent, mild, moderate, severe

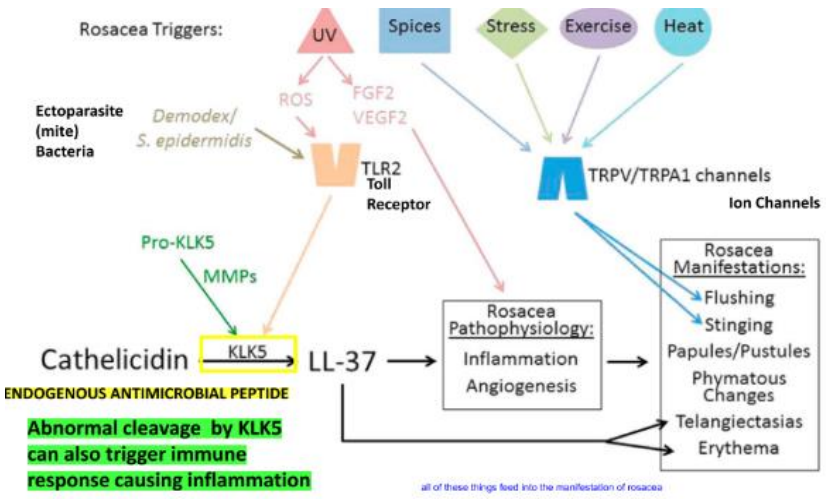
➢ Flushing (transient erythema): note frequency & grade intensity
➢ Nontransient erythema: evaluate underlying redness
➢ Papules & pustules: grade # & presence of plaques
➢ Telangiectasia (dilated capillaries): number, location, description (fine, threadlike or coarse)

Grading secondary features of rosacea

- Burning or stinging: locations & establish ongoing scoring system
- Plaques (red areas among papules/pustules): severity & location
- Dry appearance: distribution and severity
- Edema: location, acute/chronic recurrent/chronic persistent; if chronic: pitting or non-pitting; 0-3 scale (extent of swelling)
- Ocular manifestations: tearing, redness or bulbar and/or palpebral conjuctivae; telangiectasia of conjunctiva & lid margin; lid or periocular erythema; styes; foreign-body sensation; gritty feeling, burning, stinging, itching, dryness, light sensitivity, blurred vision or decreased visual acuity
- Peripheral location: extrafacial S/S (note anatomic site)
- Phymatous changes: 0-3 scale (1: patulous follicles, no contour changes); 2 (change in contour w/o nodules); 3 (change in contour w/ nodular component)

Pathophysiology

1. Immune dysfunction → increased production of abnormal cathelicidin peptides & kallikrein 5 (& activators such as Toll-like receptor 2 & matrix metalloproteinases)
2. UV radiation & temperature extremes → exacerbation (activate immune system – 4 TRPV and 1 anykrin receptor (cation channel)
3. Vascular hyperreactivity/neurovascular dysregulation → flushing
   - ➢ Microorganisms (demodex foliculorum (mite) or helicobacter pylor) as triggers – unlikely
   - ➢ Genetic



Treatment

- Avoidance of triggers
- Use of sunscreens
- Topical treatments
  - Brimonidine for erythema (vascular phase)
  - Metronidazole, azelaic acid (papulopustular phase)
  - Sulfacetamide/sulfur, erythromycin, clindamycin
- Oral treatments
  - Abx: tetracycline, doxycycline, minocycline
  - Isotretinoin
- Vascular laser surgery

Topical treatments

Brimonidine: α2 adrenergic receptor agonist = potent vasodilator

- 0.33% gel once daily
- ADRs: mild & transient
  - Pruritus, irritation, worsened erythema
  - No tachyphylaxis after 12 mo

Sodium sulfacetamide 10%
Sulfur 5%

- Cream, lotion, gel, susp., cleanser
- Allergic reactions: swollen eyes, facial dryness, pruritus, hives, increased erythema

Metronidazole: antibacterial, antiprotozoal, anti-inflammatory & antioxidant effects

- 0.75% cream/lotion or 1% cream/gel once daily
- ADRs: local skin irritations (facial burning, stinging, pruritus)

Azelaic acid: anti-inflammatory, antibacterial, keratolytic

- 15% gel once daily
- ADRs: local skin irritations irritations (facial burning, stinging, pruritus)

Oral antibiotics

- Tetracycline 500-100 mg daily (anti-inflammatory effect)
- Doxycycline: 40 mg daily (subantimicrobial dose; anti-inflammatory)
  - ➢ AEs: nasopharyngitis, diarrhea, headaches
- Minocycline: 5x adverse effects (hyperpigmentation, hepatotoxicity, drug induced lupus)
- Erythromycin/azithromycin, metronidazole are options

Sunscreens to be used in acne rosacea

- Daily broad spectrum (UVA & UVB light) sunscreen
- Physical blockers (titanium dioxide & zinc oxide) well tolerated
- Contain protective silicones (dimethicone or cyclomethicone)
- Green-tinted foundations/creams can provide coverage of erythema
- Avoid: astringents, toners, menthols, camphor, waterproof cosmetics requiring solvents for removal, or products containing sodium lauryl sulfate or chemical exfoliating agents (alpha hydroxy acids)

Acne vulgaris vs. rosacea

	Rosacea	Vulgaris
Comedones	No	Yes
Telangiectasias	Yes	No
Deep diffuse erythema	Yes	No
Age of onset	Peak 40-50 y	Peak adolescence
Areas of involvement	Usually central face	Face, back, chest
Androgen stimulation	No	Yes