ACNE

Causes

- Increased sebum production—secondary to increased androgen production
- Abnormal follicular keratinisation
- Overgrowth of *Propionibacterium acnes*
- Inflammation

Treatment

Mild acne (comedones with some papules and pustules)

Start with one of topical retinoids

- Option 1: adapalene (e.g. Differin) gel/cream top nocte
- Option 2: tretinoin (e.g. Retrieve, Stieva-A) gel/cream top nocte
- Option 3: isotretinoin (e.g. Isotrex) gel top nocte
- Option 4: tazarotene (e.g. Zorac) cream top nocte

If inadequate control after 6 weeks, add benzoyl peroxide or topical antibiotics

- Option 1: adapalene + benzoyl peroxide (e.g. Epiduo) gel top nocte
- Option 2: benzoyl peroxide (e.g. Benzac, Brevoxyl, Oxy) gel/cream top mane
- Option 3: clindamycin (e.g. ClindaTech, Zindaclin, Dalacin T) lotion/gel top mane
- Option 4: benzoyl peroxide + clindamycin (e.g. Duac) top mane
- Stop topical antibiotics once papular inflammation settled
- Use retinoids or benzoyl peroxide for long-term maintenance

For mild truncal acne (large area) use keratolytic

- Salicylic acid 3–5% solution/gel/cream top nocte

Moderate acne (widespread papules and pustules +/– mild scarring)

Any topical agents + oral antibiotics

- Option 1: doxycycline 50–100 mg PO daily for 3–6 months
- Option 2: minocycline 50–100 mg PO daily for 3–6 months (if cannot tolerate doxycycline)
- Option 3: erythromycin 250–500 mg PO bid for 3–6 months (if pregnant)

If no response after 6 weeks

- Increase the dose of oral antibiotic or change to another antibiotic
- Add OCP with anti-androgen (for girls):
  - OCP with cyproterone (e.g. Brenda-35 ED, Diane-35 ED) 1 tab PO daily

Severe acne (nodular abscesses and cysts + extensive scarring)

Any topical agents + high-dose oral antibiotic

- Doxycycline 100 mg **or** minocycline 100 mg PO q12h for up to 6 weeks

If no improvement after 6 weeks refer to a dermatologist
Any topical agents + oral retinoid

- Isotretinoin 0.5 mg/kg PO daily for 2–4 weeks, continue for 16 weeks

Maintenance

- Topical retinoid **or** topical benzoyl peroxide

(Use a gel for oily skin and a cream for dry or sensitive skin)

Co-care of the skin

- Cleanse face with a cleanser for sensitive skin type
- Moisturise face with oil-free lotion

ACTINOMYCETOMA

Actinomycetoma is a mycetomal disease affecting skin and connective tissue. It is the bacterial form of mycetoma (eumycetoma is the fungal form of mycetoma).

Pathogens

- *Actinomadura madurae*
- *Actinomadura pelletieri*
- *Streptomyces somaliensis*
- *Nocardia brasiliensis*

Distribution

- Mainly in tropical areas, India, Africa, South America, Central America and Southeast Asia

Clinical

- A slowly progressive, destructive infection of the cutaneous and subcutaneous tissues, fascia and bone
- Starts as a painless nodule, suppurates, spreads along fascial plains and drains through chronic fistulas

Diagnosis

- Presence of tumour, sinuses and grain-flecked discharge
- Gram stain and microscopic examination of the discharge
- Biopsy may be necessary—can reduce the chances of a re-established infection prior to sinus formation

Treatment

- Surgery—remove the tumour and a portion of surrounding tissue
- Antibiotic therapy can reduce the chances of a re-established infection
  - Benzylpenicillin (IV)

After improvement, switch to oral

- Penicillin V (PO) for 8–12 months

If penicillin allergy

- Rifampicin (PO) **plus** cotrimoxazole (PO) for 8–12 months

Dosage of above agents

- Benzylpenicillin 0.6–1.2 g (child: 30–60 mg/kg up to 1.2 g) IV q6h
- Penicillin V 500 mg (child: 10 mg/kg up to 500 mg) PO q6h
- Rifampicin 600 mg (neonate: 10 mg/kg; child: 20 mg/kg up to 600 mg) PO daily
- Cotrimoxazole 160/800 mg (child: 4/20 mg/kg up to 160/800 mg) PO q12h

Prognosis

- Recovery from mycetoma may take months or years
- Recurrence after surgery in at least 20% of cases

ACTINOMYCOSIS

Pathogens

- *Actinomyces* spp (particularly *A. israelii*)—gram-positive, anaerobic-to-microaerophilic filamentous bacteria, normally found in mouth and bowel

Distribution

- Occurs worldwide, including in Australia, with a higher prevalence rate in people with low socioeconomic status and poor dental hygiene

Clinical

Painful abscesses in four common sites:

- Pelvic actinomycosis (IUCD user)
- Cervicofacial actinomycosis (poor dental conditions or trauma to mouth)
- Thoracic actinomycosis (history of aspiration)
- Abdominal actinomycosis (post-abdominal surgery or perforated viscus)

The abscesses grow larger over a period of months and may penetrate surrounding tissue to skin, resulting in leakage of large amounts of pus.

Laboratory

- Sulfur granules (yellowish particles) may be seen in the pus
- Gram stain of pus—beaded and branched gram-positive filamentous rods
- Culture from draining sinuses, deep needle aspirate or biopsy specimens (promptly transport the specimens in an anaerobic transport device)
- PCR testing for *Actinomyces*—rapid and more accurate
- Pelvic ultrasound shows abscesses