Management of Acne in Primary Health Care: The good, the bad and the ugly

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Agenda

- A bit of vocabulary
- Pathophysiology
- History taking
- Examination
- Treatment
- Tools/Discussion
ACNE VULGARIS

- Chronic disorder effecting the hair follicle and sebaceous gland in which there is expansion and blockage of the follicle and inflammation.

- 80% of the population of 15-30 year olds

- Many types of acne
  - Not to be mixed-up with rosacea

- Causes
Useful vocabulary

**Sebum**: Oil produced by sebaceous glands within the hair follicle.

**Keratin**: A protein inside cells mainly in the epidermis.

1. It holds skin cells together to form a barrier.
2. It forms the outermost layer of our skin, that protects us from the environment.

**Keratinisation**: Process by which the cells mature as they move from deep inside the skin up to the surface and produce keratin.
Useful vocabulary

- Blackheads: Open Comedone
- Whiteheads: Closed Comedone
- Papules
- Pustules
- Nodules
- Pseudocysts
Acne Pathogenesis Involves 4 Pathways

- Androgens
  - Increased Sebum Production
    - Sebocyte
    - Seborrhea
  - Abnormal Follicular Desquamation
    - Keratinocyte
    - Follicular desquamation

- Altered follicular milieu
  - Propionibacterium acnes colonization and proliferation
  - Inflammation

History

- Duration of acne symptoms
- Possible aggravating factors (cosmetics, sunscreens, skin products)
  - What have they tried? How long? OTC
- Use of medicines e.g.: lithium, anti-psychotics, contraception, street drugs
- In females: menstruation history? Differential PCOS
- Start looking at the effect on them
  - Psychological
    - “It is important to look beyond the physical scarring, for there is no disease that has caused more insecurity and feelings of inferiority than acne” J. Koo
    - HEADSSS assessment - Lifestyle
    - Kessler-10 (Distress and anxiety)
    - Patient Health Questionnaire - 9 (Depression)
- Social (bullying/ Social Media platforms)
Examination

**Stage 1: MILD**
- Minor Pimples
- Blackhead and Milia
- Comedonal (whiteheads)
- No inflammation

**Stage 2: MODERATE**
- Greater Blackheads / Milia
- Papules / Pustules
- Slight Inflammation
- Acne breakout may progress from face to other areas

**Stage 3: SEVERE**
- Significant Inflammation
- Severe Papules / Pustules
- Cystic Nodules present
- High Risk for Scarring and Post-Inflammatory Hyperpigmentation
Pre-Pharmacotherapy

- Step-wise approach
  - Regardless of severity
    - Wash face gently with warm water and mild soap or cleanser
    - Un-medicated soap is fine. Products containing benzoyl peroxide or salicylic acid can be effective
    - Avoid scrubbing, if dermatitis, avoid soap and anti-acne cleansers
    - All products should be applied to all areas and not each lesion itself
    - Inform patients that it can take several months to see significant results
    - Make sure that their usual facial products do not contribute to their acne e.g.: cosmetics/sunscreen – look for skin care products labelled “NON-COMEDOGENIC”
Pharmacotherapy

**MILD ACNE**

- Topical benzoyl peroxide
- Salicylic acid 0.1 – 2% cream is an alternative to benzoyl peroxide, but is generally less effective and may also cause skin dryness. It works by softening and descaling the skin, thereby reducing comedones.
- Topical retinoid
- Topical erythromycin and clindamycin
MODERATE ACNE

- Continue topical benzol peroxide or topical retinoid
- Use a tetracycline such as (Doxycycline 50-100mg) daily for 4 to 6 months. Can increase to BD if tolerated. Can do every other day if good response after 2-3 months
- Minocycline (tetracycline) is effective but associated with > lupus, hepatitis and hyperpigmentation
- Erythromycin 400mg BD
  - Informed patients with potential side effects of ABs
- COC in females
Pharmacotherapy

**SEVERE ACNE**

- **Isotretinoin**
  - If unfamiliar with the drug, discuss with a dermatology NP or CNS or dermatologist
  - Retinoid acid (Vit. A)
  - Can be used in moderate acne that causes distress or scarring or not responding
  - Acts on the 4 pathogenesis of acne
  - Teratogenic - Commence treatment day 2 or 3 of menstrual cycle – Bullet proof contraception
  - Caution in Breastfeeding
  - Hepatic Impairment
  - Hyperlipidaemia
  - Mental Health
Isotretinoin

- **Dose according to weight**
  - 500mcg/kg/day (one to two divided doses) for 2 to 4 weeks. Can increase to 1mg/kg/day for 16 to 24 weeks for a maximum cumulative dose of 150mg/kg per course (NZF)

- **In practice in New Zealand**
  - 10mg per day until the acne has cleared-up and for another three to four months after.
    - A lower dose of 5mg per day is likely to be effective but in NZ it is not funded. We can’t half the capsule!
Severe acne

- Refer to NP dermatology or dermatologist
  - Take photos
  - Ask for their opinion through PMS

- If fever, arthralgia, bone pain, ulcerated or extensive skin lesions. Organise a blood count and refer urgently
Technologies

- Intense-pulsed light therapy (IPL)
- Light Therapy
- Laser therapy
- Photodynamic
Pharmacotherapy – Take home messages

<table>
<thead>
<tr>
<th>Treatment of acne vulgaris</th>
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<tbody>
<tr>
<td><strong>Comedonal acne</strong></td>
</tr>
<tr>
<td>• Closed or open comedones on forehead, nose &amp; chin</td>
</tr>
<tr>
<td>• May progress to inflammatory pustules or nodules</td>
</tr>
<tr>
<td>• Treatment. <strong>Topical retinoids</strong>, salicylic, azelaic, or glycolic acid</td>
</tr>
<tr>
<td><img src="image1" alt="Comedonal Acne" /></td>
</tr>
<tr>
<td><strong>Inflammatory acne</strong></td>
</tr>
<tr>
<td>• Inflamed papules (&lt;5 mm) &amp; pustules; erythema</td>
</tr>
<tr>
<td>• Treatment:</td>
</tr>
<tr>
<td>• Mild. Topical retinoids + benzoyl peroxide</td>
</tr>
<tr>
<td>• Moderate. Add topical <strong>antibiotics</strong> (eg, erythromycin, clindamycin)</td>
</tr>
<tr>
<td>• Severe. Add oral antibiotics</td>
</tr>
<tr>
<td><img src="image2" alt="Inflammatory Acne" /></td>
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<tr>
<td><strong>Nodular (cystic) acne</strong></td>
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<tr>
<td>• Large (&gt;5 mm) nodules that can appear cystic</td>
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<tr>
<td>• Nodules may merge to form sinus tracts with possible sinning</td>
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<tr>
<td>• Treatment:</td>
</tr>
<tr>
<td>• Moderate. Topical retinoid + benzoyl peroxide + topical antibiotics</td>
</tr>
<tr>
<td>• Severe. Add oral antibiotics</td>
</tr>
<tr>
<td>• Unresponsive severe: <strong>Oral isotretinoin</strong></td>
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<tr>
<td><img src="image3" alt="Nodular Cystic Acne" /></td>
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</tbody>
</table>
References

- Rademaker M. Isotretinoin: dose, duration and relapse. What does 30 years of usage tell us?
Useful Tools/Discussion

- [http://www.saferx.co.nz/assets/Documents/isotretinoin.pdf](http://www.saferx.co.nz/assets/Documents/isotretinoin.pdf)
- [https://www.goodfellowunit.org/events/webinar-prescribing-isotretinoin-acne-primary-care](https://www.goodfellowunit.org/events/webinar-prescribing-isotretinoin-acne-primary-care)
- [https://www.nzgp-webdirectory.co.nz/site/nzgp-webdirectory2/files/pdfs/forms/PHQ-9_Depression.pdf](https://www.nzgp-webdirectory.co.nz/site/nzgp-webdirectory2/files/pdfs/forms/PHQ-9_Depression.pdf)
- [http://www.gpcme.co.nz/pdf/AdolescentHealthAssessment.pdf](http://www.gpcme.co.nz/pdf/AdolescentHealthAssessment.pdf)

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