Guidelines for Acne Treatment (2011)

Philippine Dermatological Society

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Acne Treatment Guidelines

Definition

**ACNE VULGARIS** is a common, chronic, multifactorial, polymorphic, inflammatory, non-infectious disease involving the pilosebaceous unit (PSU).

**Pathogenesis**

Four factors play major roles:
1. Abnormal desquamation of follicular keratinocytes; follicular epidermal hyperproliferation
2. Excess sebum production
3. Proliferation of anaerobic *Propionibacterium acnes* (*P. acnes*)
4. Immune and inflammatory responses

Androgenic stimulation, genetic and external factors target both the sebocytes and keratinocytes. This leads to sebaceous hyperplasia/hyperseborrhea and follicular hyperkeratosis, respectively. Changes in the follicular homeostasis lead to accumulation of these materials and distention of sebaceous follicle lumina (microcomedo). Comedogenesis ensues and there is proliferation of *P. acnes*. Production of proinflammatory chemotactic and cytokine factors leads to inflammation of acne and the activation of host immune responses.

### Classification of Acne Severity

<table>
<thead>
<tr>
<th>Severity</th>
<th>Description</th>
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<tbody>
<tr>
<td>MILD</td>
<td>Predominance of comedones ≤20 with few inflammatory papules ≤15</td>
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<tr>
<td>MODERATE</td>
<td>Predominance of inflammatory papules and pustules ≥15 with comedones and few nodules ≤3</td>
</tr>
<tr>
<td>SEVERE</td>
<td>Primarily nodules and cysts ≥3 with presence of comedones, papules and pustules</td>
</tr>
</tbody>
</table>

**General Management Strategies in Acne**
- Perform careful patient history
- Teach patients about gentle skin cleansing
- Show appropriate application technique for topical therapies
- Help patients to have realistic expectations of therapy
- Show empathy for patients’ distress due to acne

**Microbiologic Testing**
- Routine microbiologic testing is unnecessary in the evaluation and management of patients with acne.
- Those who exhibit acne-like lesions suggestive of gram-negative folliculitis may benefit from microbiologic testing: bacterial cultures, including antibacterial sensitivities.

**Endocrinologic Testing**
- Routine endocrinologic evaluation (e.g., for androgen excess) is not indicated for the majority of patients with acne.

- Laboratory evaluation is indicated for patients who have acne and additional signs of androgen excess.
- In prepubertal children, a hand film for bone age is a practical screen prior to specific hormonal testing.
- Increased awareness of clinical signs of androgen excess will help identify those patients who may benefit from further evaluation and treatment by an endocrinologist or gynecologic endocrinologist.
- The following laboratory tests may be helpful: free testosterone, dehydroepiandrosterone sulfate (DHEAS), leutinizing hormone (LH), and follicle-stimulating hormone (FSH)

### Acne Treatment General Guidelines

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
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<tbody>
<tr>
<td>MILD</td>
<td>First Choice: Topical Retinoid</td>
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<td></td>
<td>Alternatives: Alternative Topical Retinoid or Azelaic Acid or Salicylic Acid</td>
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<tr>
<td></td>
<td>Papules/Pustules: First Choice: Topical Retinoid + Topical Antimicrobial ± Benzoyl Peroxide (BPO)</td>
</tr>
<tr>
<td></td>
<td>Alternatives: Alternative Topical Retinoid or Azelaic Acid + alternative Topical antimicrobial</td>
</tr>
<tr>
<td>MODERATE</td>
<td>Papulopustules / Nodules: First Choice: Topical Retinoid + Oral Antibiotic ± BPO</td>
</tr>
<tr>
<td></td>
<td>Alternatives: Alternative Oral Antibiotic + Alternative Topical Retinoid ± BPO</td>
</tr>
<tr>
<td></td>
<td>Alternative for Females: Oral Antiandrogen + Topical Retinoid/Azelaic Acid ± Topical Antimicrobial</td>
</tr>
<tr>
<td>SEVERE</td>
<td>Nodulo-cystic: Oral Isotretinoin</td>
</tr>
<tr>
<td></td>
<td>Alternatives: High dose Oral Antibiotic + Topical Retinoid + BPO</td>
</tr>
<tr>
<td></td>
<td>Alternative for Females: High Dose Oral Antiandrogen + Topical Retinoid/ ± Alternative Topical Antimicrobial</td>
</tr>
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**ADJUNCTIVE THERAPY**
Comedo extraction, Intralional steroid injection

**MAINTENANCE THERAPY for all types of acne**
Topical Retinoids ± BPO

**Topical Therapy**
- Topical therapy is the standard of care in acne treatment.
- Topical retinoids are important in acne treatment. They reduce obstruction within the follicle and are useful in the management of both comedonal and inflammatory acne.
- Benzoyl peroxide is a bactericidal agent and combinations with erythromycin or clindamycin reduce bacterial resistance and enhance efficacy.
- Topical antibiotics (e.g., erythromycin and clindamycin) are effective acne treatments. However, the use of these agents alone can be associated with the development of bacterial resistance.
- Salicylic acid is a comedolytic/keratolytic that is moderately effective in the treatment of acne.
- Azelaic acid possesses comedolytic and antibacterial activity.

**ACNE VULGARIS** is a common, chronic, multifactorial, polymorphic, inflammatory, non-infectious disease involving the pilosebaceous unit (PSU).
properties that has been shown to be effective in clinical trials, but its clinical use, compared to other agents, has limited efficacy.

- Data from peer-reviewed literature regarding the efficacy of sulfur, resorcinol, sodium sulfacetamide, aluminum chloride, and zinc are limited.
- Employing multiple topical agents that affect different aspects of acne pathogenesis can be useful.
- Such agents should not be applied simultaneously unless they are known to be compatible.

Systemic Antibiotics

- Systemic antibiotics are a standard of care in the management of moderate and severe acne and treatment-resistant forms of inflammatory acne.
- Lymecycline, doxycycline and minocycline are more effective than tetracycline, and there is evidence that minocycline is superior to doxycycline in reducing *P. acnes*.
- Although erythromycin is effective, use should be limited to those who cannot use the tetracyclines (i.e., pregnant women or children under 8 years of age because of the potential for damage to the skeleton or teeth).
- The development of bacterial resistance is also common during erythromycin therapy.
- Trimethoprim-sulfamethoxazole and trimethoprim alone are also effective in instances where other antibiotics cannot be used.
- Bacterial resistance to antibiotics is an increasing problem.
- The incidence of significant adverse effects with antibiotic use is low. However, adverse effect profiles may be helpful for each systemic antibiotic used in the treatment of acne.

<table>
<thead>
<tr>
<th>Use of Antimicrobials in Acne Treatment</th>
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<tbody>
<tr>
<td><strong>MILD</strong></td>
</tr>
<tr>
<td><strong>MODERATE and SEVERE</strong></td>
</tr>
<tr>
<td><strong>RESISTANT</strong></td>
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Strategies to Limit Antibiotic Resistance in Acne Management

- Use of oral antibiotics can lead to resistance in commensal flora at all body sites; topical antibiotics lead to resistance largely confined to skin of treated site.
- Oral antibiotics are recommended for moderate to moderately severe acne.
- Topical antibiotics may be used in mild to moderate acne as long as they are combined with benzoyl peroxide (BPO) and a topical retinoid.
- Limit the duration of antibiotic use and assess response to antibiotics and continuing need at 6 to 12 weeks.
- Use BPO concomitantly as a leave-on or as a wash.
- BPO for 5 to 7 days between antibiotic courses may reduce resistant organisms on the skin; however, BPO does not fully eradicate potential for resistant organisms.
- Avoid using antibiotics (either oral or topical) as monotherapy either for acute treatment or maintenance therapy.
- Avoid the simultaneous use of oral and topical antibiotics without BPO, particularly if chemically different.
- Do not switch antibiotics without adequate justification; when possible, use the original antibiotic for subsequent courses if patients relapse.

- Use topical retinoids for maintenance therapy, with BPO added for an antimicrobial effect if needed.
- Strict adherence by patients is necessary.

Hormonal Agents

- Estrogen-containing oral contraceptives can be useful in the treatment of acne in some women.
- Oral antiandrogens, such as spironolactone (50-200 mg) and cyproterone acetate, can be useful in the treatment of acne.
- While flutamide can be effective, hepatic toxicity limits its use. There is no evidence to support the use of finasteride.
- There are limited data to support the effectiveness of oral corticosteroids in the treatment of acne. Oral corticosteroid therapy is of temporary benefit in patients who have severe inflammatory acne.
- In patients who have well-documented adrenal hyperandrogenism, low-dose oral corticosteroids may be useful in treatment of acne.

Isotretinoin

- Oral isotretinoin is approved for the treatment of severe recalcitrant nodular acne.
- It is also useful for the management of lesser degrees of acne that are treatment-resistant or for the management of acne that is producing either physical or psychological scarring.
- The approved dosage is 0.5 to 2.0 mg/kg/day usually given over a 20-week course. Drug absorption is greater when taken with food. The initial acne flaring that may be seen can be minimized with a beginning dose of 0.5 mg/kg/day or less. Alternatively, lower doses can be used for longer time periods, with a total cumulative dose of 120 to 150 mg/kg.
- Oral isotretinoin is a potent teratogen. Because of its teratogenicity and the potential for many other adverse effects, this drug should be prescribed only by those physicians knowledgeable in its appropriate administration and monitoring.
- Mood disorders, depression, suicidal ideation, and suicides have been reported in patients taking this drug. However, a causal relationship has not been established.
- While hyperostosis, premature epiphyseal closure, and bone demineralization have been observed with prolonged use of higher dose retinoids, in the usual course of acne treatment these findings have not been identified. Routine screening for these issues is not required.
- Laboratory monitoring during therapy should include triglycerides, cholesterol, transaminases, and complete blood counts.
- Some patients experience a relapse of acne after the first course of treatment with isotretinoin. Relapses are more common in younger adults or when lower doses are used.

Complementary Therapy

- Herbal and alternative therapies have been used to treat acne. Although these products appear to be well tolerated, very limited data exist regarding the safety and efficacy of these agents.

Dietary Restriction

- Dietary restriction (either specific foods or food classes) has not been demonstrated to be of benefit in the treatment of acne.

Learn to access drug info on your cellphone. Send PPD to 2600 for Globe/Smart/Sun users.
**Recommended Therapeutics**

The following index lists therapeutic classifications as recommended by the treatment guideline. For the prescriber’s reference, available drugs are listed under each therapeutic class. For drug information, please refer to the Philippine Drug Directory System (PPD, PPD Pocket Version, PPD Text, PPD Tabs).

### Antiacne
- **Adapalene**
  - Differin Cream/Gel
- **Adapalene/Benzoyl peroxide**
  - Epiduo
- **Azelaic acid/Benzoyl peroxide**
  - Skinoren
- **Benzoyl peroxide**
  - Benzac AC Gel/Wash
  - Panoxyl
  - Panoxyl 4% Cream
  - Panoxyl Bar 5%
- **Cyproterone acetate/ethinylestradiol**
  - Althea
  - Diane-35
- **Isotretinoin**
  - Acnetrex 10
  - Isotrex
  - Roaccutane
- **Miconazole/Benzoyl peroxide**
  - Acne Plus
- **Sulfonated surfactant blend of vegetable oil**
  - Acne-Aid
- **Tretinoin**
  - Airox
  - Derm-A
  - Derm-A Lotion
  - Drugmaker's Biotech Tretinoin
  - Retacyn
  - Retin-A
  - Stevia-A 0.025%
  - Stevia-A 0.05%
  - Stevia-A Forte
  - T3 Actin 0.1% Cream
  - Vesanoid

### Topical Anti-infectives
- **Antibacterials**
  - Erythromycin
    - Sansacne
    - Stelmycin
  - Clindamycin phosphate
    - T3 Mycin 1% Topical Solution
    - T3 Mycin 1.2% Gel
- **Miconazole/Benzoyl peroxide**
  - Acne Plus

### Antifungal
- **Salicylic acid/Precipitated Sulfur**
  - Sastid
- **Clindamycin phosphate/Benzoyl peroxide**
  - Duac

### Systemic Antibiotics
- **Clindamycin**
  - Anerocin

### Estrogens, Progesterones & Related Synthetic Drugs
- **Cyproterone acetate/ethinylestradiol**
  - Althea
  - Diane-35

### Hormones & Related Drugs
- **Gonadal Hormones & Antagonist**
  - Antiandrogens
    - Cyproterone acetate
      - Androcur
    - Flutamide
      - Fugeral
    - Spironolactone
      - Aldactone*

(*See under Cardiovascular Section of PPD/PPD Pocket Version)