Overview

Acne is a common cutaneous disorder that can affect anyone, but most often, adolescents and young adults. Its psychological impact can be quite profound as it can cause embarrassment and anxiety among those afflicted. It is typically categorized based on severity.

Classification

There are many ways to classify acne based on severity. There is no universal classification system. Typically, a description of actual lesions encountered are the most useful in order to guide treatment. Classifying acne severity is based on a number of factors including type of lesion, presence of scarring, presence of draining lesions or sinus tracts.

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
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<tr>
<td>Type I (mild)</td>
<td>Comedonal, sparse, no scarring</td>
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<tr>
<td>Type II</td>
<td>Comedonal, papular, moderate +/- little scarring</td>
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<tr>
<td>Type III</td>
<td>Comedonal, papular and pustular with scarring</td>
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<tr>
<td>Type IV (most severe)</td>
<td>Nodulocystic acne, risk of severe scarring</td>
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Note: Typical locations include face, neck, upper chest and back

Exacerbating Factors

- Psychological Stress
- Mechanical pressure (i.e. leaning face on hands)
- Systemic Medications and Topical Agents (lithium, phenytoin, anabolic steroids, corticosteroids, halogens, androgens, iodides, oily cosmetics, COCs high in progesterin, topical coal tar, cyclosporine, dantrolene, gabapentin, phenobarbital, psoralens, quinidine, quinine
- Hormonal Changes (that occur during adolescence)

Diagnostic Evaluation

A careful history including a complete list of medication and vitamins should be obtained. The patient should be asked about stressors and all products used on their skin. Examination should include a careful skin assessment, noting the type and location of lesions as this is critical for determining the appropriate treatment regimen. In women, it is important to also look for any signs of hyperandrogenism including hirsutism, acanthosis nigricans and inquiring about menstrual irregularity. This is important as PCOS, the most common cause of hyperandrogenism, is associated with acne. Signs of hirsutism or virilisation should prompt a further workup.

Differential Diagnosis

- Folliculitis – comedones are absent, lesions typically monomorphous (acne is polymorphous as lesions seen in different stages of development)
- Rosacea – acne vulgaris is distinguished from acne rosacea by presence of comedones in the absence of telangiectasias, as well as erythema and pustules on the central face
- Perioral Dermatitis – characterized by grouped, small erythematous papules in a perioral distribution (vermilion border typically spared)
- Sebaceous hyperplasia – umbilicated yellowish papules found on forehead and cheeks

Routine Basic Care

- Discontinue any acnegenic moisturizers/substances
- Use oil free makeup
- Discontinue manipulation of lesions
- Avoid stress (when possible), astringents, scrubs
- When shaving – shave area lightly, only once and go with grain of hair growth
- Face washing – preferably once daily with mild soaps (Dove, Aveeno, Cetaphil, Spectro Gel)
- In dry seasons, moisturize face with oil free moisturizers
- Note: no evidence that chocolate or greasy food causes or worsens acne

Approach for Acne Therapy

Routine Basic Care (as above) → Benzoyl Peroxide 2.5% or 5% (BP) → Can add topical antibiotic (if papulopustular and/or comedonal) to BP +/- Retinoid (if comedonal) → If female, consider OCP's → Systemic Antibiotics +/- topicals → Isoretinoin (avoid use of topicals due to excessive drying)
Comparison Chart for Common Acne Therapies

<table>
<thead>
<tr>
<th>Product</th>
<th>Mechanism of Action</th>
<th>Suggestions for use</th>
<th>Examples</th>
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<tr>
<td>Benozyl Peroxide (BP)</td>
<td>Anti-inflammatory/Comedolytic</td>
<td>• Start with 2.5% water-based to reduce irritation&lt;br&gt;• Increase to 5% if tolerable&lt;br&gt;• Side Effects: contact dermatitis, dryness, peeling, may bleach clothing/linens&lt;br&gt;• Apply once daily to entire affected area, can increase to 2x/day</td>
<td>Water based: Solugel (4%, 8%)&lt;br&gt;Benzac AC (5%)&lt;br&gt;Panoxyl Aquagel (2.5%, 5%)&lt;br&gt;Proactiv Solution (2.5%)&lt;br&gt;Alcohol based: Benzagel (5%, 10%)&lt;br&gt;Panoxyl (5% 10%)</td>
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<td>Topical Retinoids</td>
<td>Useful for comedonal lesions and long term acne control</td>
<td>• Side Effects: erythema, dryness, burning, photosensitization&lt;br&gt;• Avoid in pregnancy&lt;br&gt;• Apply qhs (initially apply q2-3 nights to avoid s/e)</td>
<td>Retin-A (various strengths)&lt;br&gt;Stieva-A (various strengths)&lt;br&gt;Vit A Acid (various strengths)&lt;br&gt;Adapalene 0.1% (Differin)&lt;br&gt;Tazarotene 0.05%, 0.1% (Tazorac)</td>
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<tr>
<td>Topical antibiotics</td>
<td>Anti-inflammatory</td>
<td>• To ↓ bacterial resistance, combine with BP&lt;br&gt;• Response within 3 months and then can be discontinued and BP or Retinoid can be used for maintenance therapy&lt;br&gt;• Side effects: erythema, peeling, itching, dryness, burning</td>
<td>Clindamycin: (Dalacin T, Clindets, Clindasol [contains SPF 15])&lt;br&gt;Erythromycin: (Erysol 2% contains SPF 15)&lt;br&gt;Combination products include: BenzaClin, Clindoxyl&lt;br&gt;Use BID</td>
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<td>Oral Antibiotics</td>
<td>Moderate-severe acne, acne on chest, back or shoulders, patients for whom topical combinations have failed</td>
<td>• Side Effects: GI upset, vaginal candidiasis, photosensitivity</td>
<td>Tetracycline (250 mg)&lt;br&gt;Doxycycline (100 mg)&lt;br&gt;Minocycline (50, 100 mg)&lt;br&gt;Erythromycin (250, 333, 500 mg)&lt;br&gt;Note: can consider pulse therapy to reduce resistance</td>
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<tr>
<td>Isoretinoin</td>
<td>Severe, scarring acne</td>
<td>• Start at low dose for first month (0.5 mg/kg) and titrate up as permitted&lt;br&gt;• Side effects: arthralgia, dryness of mucous membranes, dyslipidemia, sun sensitivity, mood changes&lt;br&gt;• Pt must be on reliable contraception</td>
<td>Accutane&lt;br&gt;Clarus&lt;br&gt;Note: Bloodwork should be done initially and then q3 months (BHCG, lipids, AST, ALT)</td>
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Combination Medications

It is important to consider combination therapy when treating acne as the combination of a topical retinoid with an antimicrobial agent recommended. The combination of a topical antibiotic plus a topical or oral antibiotic appears to be more effective than either treatment alone. It is also recommended to use benzoyl peroxide in combination with topical/oral antibiotics as this reduces the development of antibiotic resistance.

Examples include:
- Benzoyl peroxide 2.5% + adapalene 0.1%. (Tactuo)
- Clindamycin 1% + tretinoin 0.025%. (Biacna)
- Clindamycin phosphate 1% and Benzoyl Peroxide 5% (Clindoxyl)
- Tretinoin 0.01% and Erythromycin 4% (Stievaamycin mild), Tretinoin 0.025% and Erythromycin 4% (Stievaamycin Regular), Tretinoin 0.05% and Erythromycin 4% (Stievaamycin Forte)

Patient Education

- When starting topical and systemic acne medication, educate patient that 8-12 weeks are needed for noted improvement
- There may be clinical worsening before improvement (common with Isotretinoin)
- Common side effects of topicals include: contact dermatitis, dryness and peeling, erythema, burning, photosensitization
- Common side effects for systemic treatment depends on the type of medication:
  - Antibiotics → GI upset, photosensitivity, vaginal candidiasis
  - OCP’s → Breakthrough bleeding, headache
  - Isotretinoin → Mucous membrane dryness, pruritis, hair loss, rash, headache, increased cholesterol, LDL, TG’s, decreased HDL, sun sensitivity, minor aches

  Note: TEST FOR PREGNANCY (prior to initiation, during and 2 month after discontinuing). Advise to use 2 reliable forms of contraception.
- When treating acne in pregnant patients, it is imperative to consider the severity of acne. Some acne treatment is contraindicated in pregnancy including oral irotretinoin and topical tazarotene. If patients desire treatment when pregnant, it would be reasonable to start with topical antibiotics and move towards oral medications as necessary.

References can be found online at http://www.dfcm.utoronto.ca/programs/postgraduateprograme/One_Pager_ProjectReferences.htm