# Acne
# in Adolescents and Adults

**Catherine Zip, MD, FRCPC**
Presented at the University of Calgary's Family Physician Update 2006

Acne is a chronic disorder of the pilosebaceous unit which affects 85% of individuals between the ages of 12 years and 24 years.

## Epidemiology

Although acne most commonly occurs in adolescence, it is not uncommon in adulthood, particularly in women. In one study, 12% of women ≥ 25 years or older were affected and this percentage did not decrease until after the age of 44.[1]

## Evaluation of acne patients

When evaluating an acne patient, important factors to consider on history and physical examination are outlined in Table 1.

## Treatment

Appropriate treatment options depend upon:

- previous acne therapy and its efficacy,
- the severity of the acne,
- the presence of acne scarring and
- the psychosocial effect of the acne on the patient.

Acne severity is most commonly graded as mild, moderate or severe (Table 2).

*Acne is a chronic disorder of the pilosebaceous unit which affects 85% of individuals between the ages of 12 years and 24 years.*



Table 1
**Evaluation of Acne Patients**

| History | Physical examination |
|---|---|
| • Previous acne therapy and its efficacy<br>• Other medications (that may aggravate acne) | • Examine face, neck, upper trunk, arms |
| • Family history<br>• Psychosocial impact<br>• Females with suspected hormonal acne-menstrual regularity, fluctuation of acne with menstrual cycle use of oral contraceptive | • Presence of comedones (blackheads or whiteheads), papulopustules, cysts<br>• Secondary changes including pigmentation alteration, excoriations, scarring |

## Mild acne

Mild acne consists of mainly comedones with or without a few inflammatory lesions. Topical acne therapy is the treatment of choice for mild acne (Table 3). Therefore, topical therapy is preventative and must be used on all of the affected areas for a minimum of six weeks to eight weeks to evaluate efficacy. These agents are generally used in combination to optimize results.

Table 2
**Acne treatment**

| Mild acne | Topical treatment |
|---|---|
| Moderate acne | Topical therapy and oral antibiotics or hormonal agents |
| Severe acne or ongoing acne scarring | Isotretinoin |

## Moderate acne

Moderate acne consists of comedones and several inflammatory lesions. In addition to topical agents, oral antibiotics are commonly used in this setting (Table 4). Antibiotics must be taken for six weeks to eight weeks to judge efficacy and are typically used for three months to six months. Long-term use of antibiotics is discouraged because of emergence of resistant stains of *Propionibacterium acnes*, most commonly to erythromycin. The clinical relevance of antibiotic resistance in the treatment of acne is unclear, as the anti-inflammatory effects of these drugs are also important.

Hormonal agents, such as oral contraceptives and spironolactone, may be effective in women with suspected hormonal acne.

*Although acne most commonly occurs in adolescence, it is not uncommon in adulthood, particularly in women.*

Table 3
**Topical acne treatment**

| Type | Mechanism of action | Adverse effects | Clinical Use |
|---|---|---|---|
| Retinoids<br>• Tretinoin<br>• Adapalene<br>• Tazarotene | • Normalize desquamation of follicular epithelium<br>• Anti-inflammatory effects | • Irritation | • Comedones,<br>• Papulopustules<br>• Avoid during pregnancy and lactation |
| Benzoyl peroxide | • Antibacterial<br>• Weak comedolytic | • Irritation, bleaching of fabrics | • Papulopustules |
| Antibiotics<br>• Erythromycin<br>• Clindamycin | • Antibacterial | • Generally well tolerated | • Papulopustules<br>• Avoid as monotherapy to minimize development of resistance |

Table 4
**Oral antibiotics in the treatment of acne**

| Antibiotic | Dosage | Adverse effects | Clinical Use |
|---|---|---|---|
| Tetracycline | 500 mg b.i.d. | GI Upset<br>Vaginal candidiasis | Safest and cheapest<br>Must be taken on an empty stomach |
| Doxycycline | 100 mg q.d. or b.i.d. | Photosensitivity | |
| Minocycline | 50 mg to 100 mg q.d. or b.i.d. | Vertigo<br>Pigmentation changes<br>Hepatitis<br>Lupus-like syndrome | Most effective but concern regarding long-term adverse effects |
| Trimethoprim | 100 mg to 300 mg q.d. or b.i.d. | Allergic reaction | Second-line agent |
| Erythromycin | 500 mg b.i.d. | GI upset | Second-line agent |

## Severe Acne

Severe acne consists of comedones, numerous inflammatory lesions and cysts. For severe acne or acne of any severity associated with ongoing acne scarring, isotretinoin is the treatment of choice.[2] Isotretinoin is also warranted for moderate acne that does not respond to oral antibiotics or rapidly recurs after antibiotic therapy.

Isotretinoin is a retinoid that is prescribed at a dose of 0.5 mg/kg/d to 1 mg/kg/d and continued until a target dose of 120 mg/kg to 150 mg/kg is reached. Isotretinoin is unique amongst acne therapies in its potential to induce remission of the disease. In one study, 39% of acne patients remained disease free three years after a single course of therapy.[3]

Adverse effects of isotretinoin include most commonly mucocutaneous dryness. Liver enzymes, triglycerides and cholesterol may become elevated and are monitored during therapy. The possibility of mood changes and depression must be screened for during follow-up. As isotretinoin is a potent teratogen, women of childbearing potential must use two forms of contraception from one month before until one month after use of isotretinoin. Pregnancy testing is mandatory in this group.

## Summary

Multiple agents are available for the treatment of acne. Appropriate therapy depends on the success of previous treatment, acne severity, the presence of scarring and the psychosocial impact of the acne.

cme

**Dr. Catherine Zip** is a Dermatologist and has a Private Practice at the Dermatology Centre in Calgary, Alberta.

References:
1. Goulden V, Stables I, Cunliffe WJ: Prevalence of facial acne in adults. J Am Acad Dermatol 1999; 41(4):577-80.
2. Maddin WS, Landells ID, Poulin Y, et al: Treatment of acne vulgaris and prevention of acne scarring: Canadian consensus guidelines. J Cutan Med Surg 2000; 4 (Supple 1).
3. White GM, Chen W, Yao J, et al: Recurrence rates after the first course of isotretinoin. Arch Dermatol 1998;134(3):376-8.