

A GP's guide to treating acne

JO-ANN SEE MB BS, FACD

MUNTHUR ZUREIGAT MB BS, FRACGP, DipDerm

The many different treatments available for patients with acne range from over-the-counter preparations to isotretinoin. GPs are in the ideal position to assess the patient with acne and offer an individualised treatment regimen.

In a world full of Internet experts and seemingly endless treatment choices, patients are confused as to how to choose the correct treatment options for their acne. GPs are on the 'front line' of acne management, and need to be able to offer their patients safe and effective treatment, as well as address concerns about acne management.

Epidemiology and patient concerns

Typically, acne vulgaris occurs during the teenage years; however, prepubertal acne and postadolescent acne also occur and GPs should be competent in managing patients with these conditions.¹ Recent studies have shown that an earlier onset of acne seems to coincide with an earlier onset of puberty.^{2,3}

Acne is often considered to be a chronic disease as it can persist continuously for years or be episodic over months or years. Some patients become disillusioned with their doctors and acne treatment because they feel the condition is not getting better or they may have a relapse of acne after clearance. The type of acne (i.e. mild, moderate or severe) a patient has therefore needs to be recognised, and the treatment options that will work best. It is most important that treatment options be individualised for each patient.

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Dr See is a Dermatologist in private practice at Central Sydney Dermatology, Sydney, and is co-chair of the All About Acne group (www.acne.org.au).

Dr Zureigat is a rural GP and Visiting Medical Officer in Milton, NSW, with an interest in dermatology.



KEY POINTS

- Consider acne as a diagnosis in children and adults, as well as in adolescents.
- Individualise treatment according to the clinical presentation and psychological needs of the patient.
- Review patients every three to six months so management can be assessed and changed if ineffective.
- Treat patients with acne early and effectively to avoid acne scarring.

Many patients are worried about acne scarring (Figure). Early effective management can lessen the risk of permanent scarring and therefore it is vital that effective treatment is prescribed.⁴ Patients are also often concerned about the side effect profile of acne medications, and this may decrease patient adherence to treatment.

Because of global concern about the increasing antibiotic resistance of bacteria,⁵ topical or oral antibiotics should not be prescribed as monotherapy for patients with acne. The risk of antimicrobial resistance is minimised by adding benzoyl peroxide to either topical or oral antibiotic therapy. Antibiotic courses should be limited to three to six months, and topical and oral antibiotics should not be prescribed simultaneously.

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The GP consultation

A diagnosis of acne is made clinically by taking a full patient history and conducting an examination to establish the type and severity of the acne and the underlying psychological impact. Laboratory investigations may be needed if underlying hormonal factors are being considered or as a baseline for some oral medications such as isotretinoin.

A key question to ask is how long the patient has had acne. A long period of acne may increase the risk of scarring and may also be a clue that the patient may be resistant or refractory to previous treatments. It is important to take the time to enquire about any family history of acne and whether the patient is taking any medications or supplements. Recently, there has been concern that certain bodybuilding supplements may contribute to acne.⁶

It is important to determine which treatments for acne the patient has used and, in particular, the duration of use because many patients do not persevere with a treatment for long enough for it to be effective. Many patients take oral antibiotics for acne for a short time and expect them to be effective immediately, so it is important to explain that it can take up to four to six weeks

of taking the treatment before a beneficial effect is seen. Other patients are prescribed antibiotics indefinitely; these patients should be monitored for effectiveness of the treatment and the treatment changed if necessary. Side effects can occur with prolonged use of antibiotics, such as minocycline hyperpigmentation. It is important to address questions about side effects as some patients may not be willing to adhere to treatment if they are worried about drug side effects and safety.

Time should also be taken to find out how acne affects a patient psychologically, as some will limit their social activities due to their acne. Issues of self-esteem may prevent patients from socialising or affect their functioning at work. It is important to note that quality of life improves with effective management and clearing of acne. Although consultation time may be limited, it may be worthwhile asking the patient why they think they have acne or what they think the cause is. The four main factors contributing to the cause of acne are:

- high sebum production
- hyperkeratinisation of the pilosebaceous duct
- colonisation of the ducts by *Propionibacterium acnes*
- inflammation.

Many myths surround the factors that influence acne and these should be dispelled. Diet is a controversial topic; however, the most recent Cochrane review of acne suggested that a diet comprising foods with a low glycaemic load may be useful in reducing total skin lesions in acne vulgaris.⁷

The physical examination

GPs can quickly assess acne severity by looking at the patient's face and torso and asking about the psychological impact of the condition. Acne severity can be classified as: mild – noninflammatory or inflammatory comedones, moderate (with inflammatory papules and pustules) or severe (with deep inflammatory nodules and cysts). Patients, especially those with darker skin (Fitzpatrick III or higher), may have post-inflammatory redness or hyperpigmentation as their inflammatory lesions resolve, these lesions are often mistaken as being active acne lesions.

Severe but uncommon forms of acne such as acne conglobata and acne fulminans may require urgent referral of the patient to a dermatologist for prescription of oral or intralesional corticosteroids or oral isotretinoin.

Postadolescent acne may be a continuation of acne from adolescence into adulthood or may appear later in life. Both rosacea and perioral dermatitis can occur in the presence of adult acne, but the clinical hallmark of acne is the comedone. Acne in adults may be clinically indistinguishable from teenage acne, yet may be refractory to conventional treatment.

Investigations

Most patients with acne do not have abnormal laboratory test results but these further investigations may be warranted if the



Figure. Acne scars.

patient has a sudden onset of severe acne with symptoms of hyperandrogenism. Screening tests should be performed in the luteal phase of the menstrual cycle after the patient has stopped taking the oral contraceptive pill for at least one month. Tests include measurement of serum dehydroepiandrosterone sulfate, total testosterone, free testosterone and sex hormone binding globulin levels, and the luteinising hormone/follicle stimulating hormone ratio. Patients with sudden-onset severe acne with symptoms of hyperandrogenism may exhibit insulin resistance and they are at risk of developing diabetes and cardiovascular disease in later life.

Treatment options

Acne treatments are tailored to patients according to the severity of the acne, as shown in the Table.⁸

Before a prescription can be written, the patient should be offered advice regarding skin care, particularly skin cleansing because this can improve the condition, especially in mild cases. Even in cases of more severe types of acne, an appropriate cleanser and moisturiser can help minimise the side effects of irritant topical treatments or oral isotretinoin use. As mentioned earlier, acne myths such as the role of hygiene and diet should be dispelled. Many resources are available for both the practitioner and the patient, including the All About Acne website (www.acne.org.au) and *Fast Facts: Acne, 2nd ed.*^{9,10}

Mild acne

An acne cleanser is a good starting point for patients with mild acne and many brands are available over the counter. These products usually contain salicylic acid, glycolic acid or benzoyl peroxide; benzoyl peroxide is the stronger active ingredient, but

the patient can start using products containing any of them. Improvement may be seen within six weeks of starting use. A leave-on acne treatment, which may contain benzoyl peroxide, glycolic acid or azelaic acid, can also be added to the patient's skin care regimen.

Benzoyl peroxide works by reducing the bacterial colonisation by *P. acnes* of the pilosebaceous follicle and decreases follicular hyperkeratosis and microcomedone formation. It can be potentially irritating, so gradual introduction is recommended, starting at a low concentration. It may be used as the active ingredient in a facial wash or a leave-on cream with or without concomitant use of oral antibiotics or it can be incorporated into combination products with a topical antibiotic (e.g. clindamycin phosphate and benzoyl peroxide) or topical retinoid (e.g. adapalene and benzoyl peroxide).

Glycolic acid and other α -hydroxy acids decrease altered follicular keratinisation and improve the appearance of the skin by promoting desquamation of the stratum corneum.

Azelaic acid as a topical cream inhibits *P. acnes* growth and improves abnormal pilosebaceous follicular keratinisation. It is tolerated well and has fewer irritant side effects than benzoyl peroxide.

By the time the patient presents to their GP, they may often need a prescription for a topical acne treatment. The newer combination topical treatments, such as clindamycin phosphate plus benzoyl peroxide and adapalene plus benzoyl peroxide, aim to work faster than previous topical monotherapies as they target more areas of acne pathogenesis. Ideally, patients should be assessed eight to 12 weeks after starting treatment, and if no significant improvement is seen then treatment should be changed. It is important to confirm that the treatment regimen has actually been adhered to by the patient.

Moderate acne

In patients with moderate acne (i.e. more lesions or more inflammatory lesions than in mild acne), oral treatment is often needed. Both patient and physician should be aware that acne can increase in severity.

For patients with moderate acne, it may be necessary to:

- consider use of an oral instead of a topical antibiotic and add benzoyl peroxide
- consider prescribing the oral contraceptive pill in women with unresponsive acne.

Oral antibiotics

The primary mechanism of action of oral antibiotics is the suppression of *P. acnes* growth, but they also have anti-inflammatory properties. Doxycycline is considered first-line therapy and the most frequently prescribed dosage to treat acne is 100 mg/day, but this dosage can range up to 200 mg/day. The capsules should be taken with a full glass of water and should

TABLE. ACNE TREATMENT CHOICES⁸

	Mild		Moderate		Severe
	Comedonal	Papular/pustular	Papular/pustular	Nodular [†]	Nodular/conglobate
First choice**	Topical retinoid	Topical retinoid plus topical antimicrobial	Oral antibiotic plus topical retinoid with or without benzoyl peroxide	Oral antibiotic plus topical retinoid and benzoyl peroxide	Oral isotretinoin [§]
Alternative	Alternative topical retinoid or azelaic acid or salicylic acid	Alternative topical antimicrobial agent plus alternative topical retinoid or azelaic acid	Alternative oral antibiotic plus alternative topical retinoid with or without benzoyl peroxide	Oral isotretinoin or alternative oral antibiotic plus alternative topical retinoid with or without benzoyl peroxide or azelaic acid	High-dose oral antibiotic plus topical retinoid and benzoyl peroxide
Maintenance therapy	Topical retinoid with or without benzoyl peroxide	Topical retinoid with or without benzoyl peroxide	Topical retinoid with or without benzoyl peroxide	Topical retinoid with or without benzoyl peroxide	Topical retinoid with or without benzoyl peroxide

* Consider removal of comedones.

[†] Treatment options for pregnant women include topical antibiotics, azelaic acid, nicotinamide and glycolic acid.

[‡] With small nodules (0.5 to 1 cm).

[§] Second course in case of relapse.

^{||} Oral antiandrogen therapies, such as the combined oral contraceptive pill, are an alternative treatment for women.

not be taken just before lying down or at bedtime due to the risk of dysphagia and oesophageal irritation. Doxycycline is not recommended for use in children under 12 years of age, because of the risk of tooth discolouration, or in women who are pregnant or breastfeeding.

Minocycline is also used at a dosage of 100 mg/day. However, there are some concerns that it has more safety issues than doxycycline; these concerns regard hepatitis and lupus-like hypersensitivity syndrome as well as minocycline pigmentation with long-term use.

Oral erythromycin at a dosage of 500 mg twice daily is effective to treat acne but *P. acnes* resistance is much more common than with other antibiotics, as are gastrointestinal side effects. Its use is reserved for children and pregnant women, in whom tetracyclines are contraindicated.

Trimethoprim can be used as third-line therapy at a dosage of 200 to 300 mg twice daily.

Hormonal therapy

Hormonal therapy can be a very effective treatment for women with acne, even if their serum androgen levels are normal. Treatment decreases androgen production by the ovaries and adrenal glands as well as inhibiting the local activity of androgen nuclear receptors on sebocytes and keratinocytes. The most commonly prescribed antiandrogen therapies are the combined oral contraceptive pill, cyproterone acetate and spironolactone.

A recent Cochrane review found that all combined oral

contraceptive pills had similar efficacy in acne improvement.¹¹ Women with acne must be patient because they may only start to see an improvement in their symptoms after three months of taking the combined oral contraceptive pill and the full effect may not be seen until after six to nine months of treatment. Acne improved in 50 to 90% of cases.¹¹

Cyproterone acetate reduces sebum production and may also decrease comedone formation. It is usually given in combination with the pill at a dosage of 12.5 to 50 mg/day during the first 10 to 15 days of the menstrual cycle. It can also be prescribed on its own at a dosage of 50 to 100 mg/day from day one or five of the menstrual cycle and stopped before ovulation on day 14. An improvement is usually seen within three months.

Spironolactone acts both as an androgen-receptor blocker and inhibitor of 5 α -reductase. It is recommended that treatment be started with a low dosage such as 25 to 50 mg twice daily and then increased if the patient has no significant breast tenderness or headache. Improvement in acne may take up to three months and spironolactone is contraindicated in pregnancy because of the potential for feminisation of the male fetus.

Severe acne

Oral antibiotics are the first-line treatment prescribed by GPs for patients with acne. Some patients may require referral to a dermatologist for prescription of oral isotretinoin, such as in the following situations:

- patients with severe acne

- patients who are unresponsive to oral antibiotics
- patients at risk of scarring
- patients with psychological impairment.

The treatment dose and duration of use of oral isotretinoin depends on the patient's weight and response to treatment and the side effects that occur. Many dermatologists are now tending to prescribe lower daily doses and then increase the dose as the patient tolerates the treatment, so it is important to note that there is no standard dose.¹² Before referral of the patient for isotretinoin prescription, it has been suggested that some baseline investigations, such as liver function tests, measurement of fasting cholesterol and triglyceride levels and in women of childbearing age beta human chorionic gonadotrophin, may be helpful. As there are reports of mood change in patients taking isotretinoin, any concerns should be addressed by the dermatologist and GP, and referral to a psychiatrist may be needed.

Acne medication and pregnancy

A challenge for any practitioner is the patient with acne who wants to conceive or who is pregnant. These patients should not be prescribed topical or oral retinoids because of the risk of birth defects. Tetracycline antibiotics should not be given to pregnant women because this will lead to deposition in and staining of the infant's teeth. The limited treatment options include topical antibiotics, azelaic acid, nicotinamide and glycolic acid. Chemical peels, lasers and light treatments have some benefit but are not discussed in this article.

Conclusion

Acne management is a partnership between patient and doctor. Good communication is vital to hear patients' concerns, deliver effective treatment and modify treatment if no improvement is seen or if acne severity increases. The existence of many so-called experts selling products or treatments may be a reflection of the needs of patients to get better and get better faster. The GP, with a medical scientific background and understanding of pathophysiology, is the perfect person to advise and manage the many complexities with which patients with acne present. **MT**

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