

Prompt treatment of acne improves quality of life

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Prompt treatment of acne improves quality of life

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FIGURE 1
Severe papulopustular
acne, with cysts, in
an adolescent

Medical Photography NHS Lothian

What are the evidence-based treatments?

What factors exacerbate the condition?

Which patients should be referred?



ACNE VULGARIS IS AN INFLAMMATORY DISORDER OF THE PILOSEBACEOUS

(hair follicle) units. It is very common, affecting 90% of teenagers, albeit often mildly. However, its onset may be delayed until the late twenties or early thirties, and very occasionally even later. In the majority of cases, acne settles by the mid-twenties, but for some patients it may still be problematic in their forties and beyond.

Infantile acne, which may be the harbinger of troublesome adolescent acne, usually develops in the first three months and can last several years.

Acne has a genetic basis, involving

androgen-induced increased sebum excretion and a narrowing of the hair follicle opening by hypercornification. This leads to blockage of the pore by a comedone, subsequent ballooning of the pilosebaceous unit, and overgrowth of commensal bacteria such as *Propionibacterium acnes*. Inflammatory mediators stimulate vasodilatation and neutrophil chemotaxis into the pores, resulting in pimples and pustules. If the contents of these inflamed lesions are released into the dermis, e.g. by squeezing or picking, severe inflammation and scarring may ensue.

Acne may be exacerbated by stress, topical greasy preparations that encourage blockage of the pores such

as moisturisers and make-up, trauma e.g. friction from a back pack, and humid climates. It is a myth that poor personal hygiene contributes to acne. Similarly, lack of dietary green vegetables or excess of chocolate or greasy foods do not cause acne, although diets with a high glycaemic load and high milk consumption have been implicated. Certain medications may induce or exacerbate acne, including some oral and implanted contraceptives, and anabolic steroids.



Table 1

First-line treatments for acne⁴

Comedonal acne	Topical adapalene
Mild - moderate papulopustular acne	Topical fixed-dose combinations of adapalene/benzoyl peroxide or clindamycin/benzoyl peroxide
Severe papulopustular acne	Systemic antibiotics (doxycycline or lymecycline), together with either the fixed-dose combination of adapalene/benzoyl peroxide, a topical retinoid, or azelaic acid

DIAGNOSIS

There is usually no difficulty in the diagnosis of acne in childhood and adolescence, although rosacea (which tends to affect an older age group, and which is distinguished from acne by the lack of comedones), perioral dermatitis and milia may sometimes cause confusion.

Typically, acne affects the face, neck, shoulders, back and chest, although it can spread to the scalp and upper arms. The morphological features are:

- seborrhoea
- comedones
- inflammatory papules and pustules, sometimes progressing to
- cysts
- nodules (organising cysts)
- scars (depressed, ice-pick or keloidal)

The scratching of inflamed lesions, which is particularly common in young women (acne excoriée des jeunes filles) may mask the pustular element of acne and increase the risk of scarring.

Occasionally, 'normal' acne can dramatically deteriorate: this may be due to a Gram-negative folliculitis superimposed on acne being treated with long-term antibiotics, or the development of one of the much more severe, destructive and aggressively scarring forms, such as acne conglobata, characterised by deep, burrowing abscesses, and acne fulminans, severe ulcerating acne with fever and arthralgia.

Investigations are not normally necessary for acne. However, very occasionally there may be an underlying endocrinological disorder, such as polycystic ovary syndrome, congenital adrenal hyperplasia or Cushing's syndrome. In women with acne, an irregular menstrual cycle should prompt consideration of androgen overproduction, especially if there are virilising features such as hirsutism and female pattern alopecia: a regular menstrual cycle is very reassuring. Androgen excess should also be considered in mid-childhood and prepubertal acne.¹

COMPLICATIONS

The complications of acne can be summed up as scarring, both physical and emotional. Disfigurement from inflammation, pigmentation changes and scarring often causes embarrassment, and not infrequently undermines confidence and lowers self-esteem, see figure 1, p15. However, acne can also potentially induce much more serious psychological distress, resulting in anxiety, depression and social withdrawal.² Suicidal ideation is not unknown nor is dysmorphophobia.

Furthermore, it can be socially stigmatising and may disadvantage sufferers in their social and working relationships to a very significant degree. Thus, to dismiss acne as a cosmetic issue is to have failed to comprehend the immense angst it can cause. Treatment is effective and if initiated promptly will prevent these complications.

SUPPORT AND ADVICE

It is important to be sympathetic but realistic with patients when discussing their condition. Treatment compliance can be an issue, especially if the sufferer expects too much too soon. It may take up to four to six months before the full benefit of a treatment is apparent.

Compliance can be still further improved if the patient is well informed, particularly about potential side effects of medications. A patient information leaflet is available (in 12 languages) from the British Association of Dermatologists (www.bad.org.uk/site/792/default.aspx).

Exhort patients not to squeeze or pick their spots. If make-up is worn, advise that light, non-oily cosmetics are used.

If an emollient is required, as it often is, because many acne treatments are very drying, suggest a non-comedogenic preparation. Comedone removal with a simple extractor can be beneficial.³

TREATMENT OPTIONS IN PRIMARY CARE

The evidence-based treatment options for acne have been summarised in American³ and, more recently, European⁴ guidelines. See table 1, left, for a summary of first-line treatments.

Isotretinoin should only be prescribed by, or under the supervision of, dermatologists with expertise in the use of systemic retinoids for the treatment of acne:⁵ it is not, therefore, considered a primary care treatment option.

Comedonal acne

Topical therapy is generally advised. Topical retinoids are recommended:⁴ on the basis of tolerability, safety profile and patient preference, adapalene appears to have advantages over tretinoin, isotretinoin and tazarotene. Benzoyl peroxide and azelaic acid can also be considered, but topical antibiotics are not recommended for the treatment of comedonal acne.⁴

Mild to moderate papulopustular acne

The topical fixed-dose combinations of adapalene/benzoyl peroxide and, for up to three months, clindamycin/benzoyl peroxide are both strongly recommended for the treatment of mild to moderate papulopustular acne.⁴

Other therapeutic options that carry a medium strength of recommendation in the European guidelines include: topical retinoids, preferably adapalene, which can be used in combination with a systemic antibiotic in cases of more widespread acne of moderate degree; azelaic acid; and benzoyl peroxide.⁴

Other treatments to be considered, but which carry a low strength of recommendation, include: the fixed-dose combinations of either isotretinoin/erythromycin or tretinoin/erythromycin; oral zinc; and blue light monotherapy.⁴

Severe papulopustular acne

Systemic antibiotics (doxycycline or lymecycline, limited to a treatment period of three months), together with either the fixed-dose combination of adapalene/benzoyl peroxide, a topical retinoid, or azelaic acid, can be recommended.⁴

A systemic antibiotic in combination with benzoyl peroxide can be considered,⁴ as can, for female patients, an oral oestrogen/antiandrogen combination (such as co-cyprindiol) together with either an oral antibiotic or topical treatment.⁴ Oral antiandrogens as monotherapy are not recommended.

key points

SELECTED BY

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Acne vulgaris is an inflammatory disorder of the pilosebaceous (hair follicle) units. It has a genetic basis, involving androgen-induced increased sebum excretion and a narrowing of the hair follicle opening by hypercornification. This leads to blockage of the pore by a comedone, subsequent ballooning of the pilosebaceous unit, and overgrowth of commensal bacteria such as *Propionibacterium acnes*. Inflammatory mediators stimulate vasodilatation and neutrophil chemotaxis into the pores, resulting in pimples and pustules. Rosacea is distinguished from acne by the lack of comedones.

Acne may be exacerbated by stress, topical greasy preparations that encourage blockage of the pores, trauma and humid climates. Certain medications may induce or exacerbate acne, including some oral and implanted contraceptives, and anabolic steroids. Occasionally, 'normal' acne can dramatically deteriorate: this may be due to a Gram-negative folliculitis superimposed on acne being treated with long-term antibiotics, or the development of one of the much more severe, destructive and aggressively scarring forms.

Disfigurement from inflammation, pigmentation changes and scarring often causes embarrassment, and not infrequently undermines confidence and lowers self-esteem. Acne can also potentially induce much more serious psychological distress.

It may take up to four to six months before the full benefit of treatment is apparent. Patients should not squeeze or pick their spots. In comedonal acne, topical therapy is generally advised, and topical retinoids are recommended. The topical fixed-dose combinations of adapalene/benzoyl peroxide and, for up to three months, clindamycin/benzoyl peroxide are both strongly recommended for the treatment of mild to moderate papulopustular acne. In severe papulopustular acne systemic antibiotics together with either the fixed-dose combination of adapalene/benzoyl peroxide, a topical retinoid or azelaic acid are recommended.

Patients should be referred to a dermatologist if they: have a very severe variant; severe social or psychological problems; are at risk of scarring; have failed to respond to treatment or are suspected of having an underlying endocrinological cause.

Although ultraviolet light has immunosuppressive properties, its use for acne vulgaris is not recommended. Blue light is thought to work as an antimicrobial agent by its effect on a porphyrin (coproporphyrin III) produced by *P. acnes*, generating free radicals that are bactericidal.

The evidence base is lacking for laser therapy, intense pulsed light, red light, chemical peels, complementary therapies, psychological approaches and dietary manipulation.

Intralesional corticosteroid injections are effective in the treatment of acne cysts and nodules.³

Interestingly, trial data suggest that topical treatment is, by and large, of comparable efficacy to systemic antibiotic therapy, although expert opinion is that for severe papulopustular or moderate nodular acne systemic treatment is advisable.⁴ Because of the potential for the development of antibiotic resistance, topical monotherapy with antibiotics is not recommended, the use of systemic antibiotics should be limited to more severe acne,⁵ and any topical/systemic antibiotic therapy combined with broad-spectrum antibacterial agents such as benzoyl peroxide.⁴

In terms of efficacy, tolerability, safety, patient preference and practicability, doxycycline and lymecycline are recommended over other tetracyclines.⁴ Oral erythromycin is effective, but in view of its propensity to cause bacterial resistance its use is recommended in circumstances where tetracyclines are contraindicated (e.g. for pregnant women and young children).³ Trimethoprim and trimethoprim/sulfamethoxazole are recommended only when other antibiotics cannot be used.⁵

Acne is a chronic disease and is likely to recur, and so maintenance therapy to lessen this risk is logical, perhaps with long-term topical adapalene or azelaic acid. Further research is necessary to define the optimum regimen.

REFERRAL

Most patients with acne can be managed in primary care. NICE has produced guidance regarding referral to specialist care,⁶ advising referral to a dermatologist if the acne sufferer:

- has a very severe variant such as conglobate or fulminating acne — urgent referral (two weeks)
- has severe papulopustular acne or nodulocystic acne — referral soon
- has severe social or psychological problems — referral soon

- is considered to be at risk of, or is developing, scarring despite primary care therapies — routine referral
- has moderate acne that has failed to respond to treatment which should generally include both topical and systemic treatment over a period of at least six months — routine referral
- is suspected of having an underlying endocrinological cause for acne that requires assessment — routine referral.

CONCLUSION

The dark cloud that acne can cast over a sufferer's quality of life can be readily lifted with appropriate evidence-based treatment in primary care, and if this proves wanting referral to specialist dermatological care is appropriate.

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Useful information

British Association of Dermatologists
www.bad.org.uk

British Skin Foundation
www.britishskinfoundation.org.uk

NHS Choices
www.nhs.uk/Conditions/Acne/Pages/Introduction.aspx

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