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Acne Management: A Practical Guide Based on Current Clinical Guidelines

Dr. Ambreen Qayyum[1]*

[1]Consultant Family Medicine, PHCC Gharrafat Al Rayyan Health Centre

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***Corresponding author:** Dr. Ambreen Qayyum
Consultant Family Medicine, PHCC Gharrafat Al Rayyan Health Centre

Abstract **Review Article**

Acne vulgaris is one of the most common chronic inflammatory disorders of the skin and affects adolescents and adults worldwide. Although rarely medically serious, acne can cause significant psychological burden, post-inflammatory hyperpigmentation and permanent scarring. Management should therefore address both the severity of active disease and the risk of long-term complications. This review provides a practical, guideline-based approach to the assessment and treatment of acne vulgaris in primary care. Current guidelines support topical retinoids, benzoyl peroxide and combination therapies as important first-line treatments. Oral tetracyclines may be added for moderate-to-severe acne. Hormonal treatments, including combined oral contraceptives and spironolactone, may be useful in selected female patients. Oral isotretinoin remains the most effective systemic treatment for severe acne and should be considered early in patients with severe cystic disease, significant scarring, substantial psychosocial burden or inadequate response to standard first- and second-line treatments. Pregnancy requires particular attention, with topical and systemic retinoids and tetracyclines avoided. Treatment response should be reviewed regularly, with maintenance therapy considered in patients at high risk of relapse. Early recognition and effective treatment can reduce both psychosocial morbidity and permanent scarring.

Keywords: Acne vulgaris; acne management; topical retinoids; benzoyl peroxide; isotretinoin; spironolactone; acne scarring.

INTRODUCTION

Acne vulgaris is a chronic inflammatory disorder of the pilosebaceous glands on the skin characterised by comedones, inflammatory papules and pustules and, in more severe disease, nodules and cysts [1]. Although it most commonly begins during adolescence, acne may persist into adulthood or present for the first time in adult life, particularly in women [1,2].

The pathogenesis of acne is multifactorial and includes abnormal follicular keratinisation, increased sebaceous gland activity, Cutibacterium acnes-associated inflammation and hormonal influences [1,2]. Acne is not simply a cosmetic disorder. Persistent inflammatory disease may result in permanent atrophic or hypertrophic scarring and post-inflammatory hyperpigmentation, both of which are incredibly difficult to treat. It may also adversely affect self-esteem, social functioning and psychological wellbeing [2–4].

Current international recommendations emphasise individualised treatment according to acne severity, lesion type, risk of scarring, psychosocial impact, patient preference, previous treatment and special circumstances such as pregnancy [3–5]. This review provides a concise and practical approach to the assessment and management of acne vulgaris based on contemporary guideline recommendations.

Clinical Assessment

The diagnosis of acne vulgaris is usually clinical. Assessment should begin by identifying the predominant lesion type and determining disease severity.

Acne can broadly be classified as:

- **Comedonal acne:** open and/or closed comedones with little or no inflammation.
- **Mild inflammatory acne:** limited inflammatory papules and pustules.
- **Moderate acne:** more extensive inflammatory papules and pustules, with or without occasional nodules.

- **Severe acne:** extensive inflammatory disease, nodules, cysts or acne conglobata, particularly where there is significant scarring or a high risk of scarring [2–5].

Assessment should also include:

- Risk of permanent scarring.
- Post-inflammatory hyperpigmentation.
- Duration and previous treatment.
- Treatment adherence and tolerability.
- Psychological and social impact.
- Menstrual or hormonal associations in female patients.
- Possible medication-related or endocrine causes.
- Pregnancy or plans for pregnancy.
- Presence of truncal disease.

The risk of scarring increases with inflammatory severity and duration of disease. Early and effective treatment is therefore important, particularly in patients with nodules, previous scarring or rapidly progressive disease [3–5].

General Principles of Treatment

Treatment should be individualised according to severity, lesion type, scarring risk, psychological impact, patient preference and previous treatment [3–5].

Patients should be advised that improvement is gradual. Treatment effects may take several weeks to become apparent, and adherence is therefore essential. NICE recommends an initial treatment course of approximately 12 weeks before formal assessment of response [5].

A practical treatment strategy is:
Mild acne → topical therapy
Moderate inflammatory acne → combination topical therapy ± oral antibiotic
Severe, nodulocystic or scarring acne → early dermatology referral and consideration of oral isotretinoin

Combination treatment is generally preferred because different therapeutic agents target different aspects of acne pathophysiology [3,4].

Topical Treatment
Topical retinoids

Topical retinoids are central to acne treatment because they normalise follicular keratinisation, reduce comedone formation and have anti-inflammatory effects [2–4].

Commonly used topical retinoids include adapalene and tretinoin. Adapalene is widely used because of its efficacy and generally favourable tolerability [3,4].

Topical retinoids are particularly useful for comedonal and mild-to-moderate acne and are frequently combined with benzoyl peroxide.

Irritation, dryness and erythema may occur during the initial weeks of treatment. These effects can often be reduced by gradual introduction, appropriate moisturisation and avoidance of excessive cleansing. Counselling regarding these side effects is vital to ensure adherence to treatment.
Topical retinoids should be avoided during pregnancy [4,5].

Benzoyl peroxide

Benzoyl peroxide has both antimicrobial and anti-inflammatory activity and remains an important component of acne treatment [3,4]. It can be used alone or combined with a topical retinoid or topical antibiotic.

Benzoyl peroxide is particularly important when antibiotic therapy is prescribed because its concomitant use may reduce the development of antimicrobial resistance [3,4].
Patients should be advised that benzoyl peroxide may cause irritation and can bleach clothing, towels and bedding.

Combination topical therapy

Current guidelines favour combinations of agents with complementary mechanisms rather than topical antibiotic monotherapy [3–5].

Useful combinations include:

- adapalene plus benzoyl peroxide;
- topical retinoid plus topical antibiotic;
- benzoyl peroxide plus topical antibiotic; and
- azelaic acid with other appropriate topical agents.

Topical antibiotic monotherapy should be avoided because of the risk of antimicrobial resistance [3,4].

Azelaic acid

Azelaic acid has comedolytic, antimicrobial and anti-inflammatory properties and may be particularly useful in patients with post-inflammatory hyperpigmentation [3,4].

It can also be considered when topical retinoids are poorly tolerated or unsuitable.

Oral Antibiotics

Oral antibiotics are appropriate for moderate-to-severe inflammatory acne, particularly when topical treatment alone is insufficient [3–5].

Doxycycline and lymecycline are commonly recommended options. The updated EuroGuiDerm guideline favours doxycycline and lymecycline over minocycline and tetracycline [4].

Oral antibiotics should:

- be combined with appropriate topical therapy;
- preferably be prescribed with benzoyl peroxide;
- be used for the shortest effective duration; and
- generally, be limited to approximately 3 months unless there is a specific clinical reason for longer treatment [3–5].

Systemic antibiotic treatment beyond 3 months should be exceptional because prolonged antibiotic exposure increases concerns about antimicrobial resistance [4].

Azithromycin should not routinely be used for acne because of concerns regarding antimicrobial resistance and an unfavourable benefit-risk balance [4,7].

Tetracyclines should be avoided during pregnancy and are generally unsuitable for younger children.

Failure of moderate-to-severe acne to respond adequately to an appropriate course of systemic antibiotic-containing treatment should prompt reassessment, treatment escalation and consideration of dermatology referral.

Hormonal Treatment in Female Patients

Hormonal treatment can be particularly useful in women with persistent adult acne, especially when acne is associated with menstrual flares or a lower-face and jawline distribution [3,4].

Treatment options include:

- combined oral contraceptives; and
- spironolactone.

The choice should consider contraceptive requirements, medical history, contraindications, potential adverse effects and patient preference.

Spironolactone has increasingly strong evidence for the treatment of acne in women. The SAFA randomised controlled trial demonstrated greater improvement with spironolactone than placebo in women with acne, particularly after longer treatment duration [8].

The updated EuroGuiDerm guideline considers spironolactone an option for selected females with papulopustular, nodular or conglobate acne, generally as an adjunct to standard treatment [4].

Underlying endocrine disorders such as polycystic ovary syndrome should be considered when acne is accompanied by features such as menstrual irregularity, hirsutism or other evidence of hyperandrogenism.

Oral Isotretinoin

Oral isotretinoin is the most effective systemic treatment for severe acne and can produce prolonged remission [3–5].

It should be considered particularly for:

- severe nodulocystic acne;
- acne conglobata;
- severe inflammatory acne;
- acne causing or likely to cause significant scarring;
- acne associated with substantial psychosocial burden; and
- acne that has failed to respond adequately to appropriate topical and systemic treatment [3,4].

Isotretinoin requires specialist prescribing and strict attention to pregnancy-prevention requirements. Patients should be assessed for relevant medical and mental health history and monitored during treatment. NICE specifically recommends monitoring psychological wellbeing and symptoms of sexual dysfunction during isotretinoin therapy [5].

Acne and Pregnancy

Pregnancy requires modification of acne treatment. Systemic isotretinoin is absolutely contraindicated during pregnancy because of its high teratogenic risk [4,5].

Topical retinoids should also be avoided during pregnancy. Tetracycline antibiotics should not be used because of potential fetal effects [4,5].

Where treatment is required during pregnancy, options should be selected according to the severity of acne and pregnancy-specific safety information. Azelaic acid and benzoyl peroxide may be considered appropriate topical options in selected patients, while systemic treatment should be discussed carefully with the relevant clinician [4,5].

Women of reproductive potential who are prescribed oral isotretinoin must comply with the applicable pregnancy-prevention programme and regulatory requirements [5].

Truncal Acne

Acne affecting the chest and back is managed according to the same general principles as facial acne [4].

Topical treatment can be difficult to apply over large areas, and systemic treatment may therefore be particularly useful when truncal disease is extensive or difficult to manage with topical therapy.

Acne Scarring and Post-inflammatory Hyperpigmentation

Prevention of scarring should begin with effective treatment of active acne rather than waiting until scars have developed [3–5].

Early escalation should be considered in patients with:

- severe inflammatory lesions;
- nodulocystic disease;

- prolonged inflammatory acne;
- previous scarring; or
- a high individual risk of permanent scarring.

Patients with established scarring may require dermatological assessment for scar-directed procedures such as microneedling, subcision, laser treatment or other interventions.

Post-inflammatory hyperpigmentation is particularly important in individuals with darker skin phototypes. Effective control of active inflammation, photoprotection and appropriate pigment-directed treatment may reduce persistent pigmentation.

Review and Maintenance

Treatment should generally be reviewed after approximately 12 weeks [5].

At review, assess:

- clinical response;
- adherence;
- treatment technique;
- adverse effects and tolerability;
- development of scarring or pigmentation;
- psychological impact; and
- whether treatment escalation is required.

If there is a good response, treatment can be continued and maintenance therapy considered.

If there is a partial response, adherence, treatment technique and tolerability should first be reviewed before escalation.

If there is an inadequate response, the diagnosis should be reconsidered, adherence assessed and treatment escalated or specialist referral arranged where appropriate.

Maintenance therapy is particularly useful in patients with frequent relapse. NICE recommends considering adapalene plus benzoyl peroxide as a maintenance option, with adapalene, azelaic acid or benzoyl peroxide as alternatives when the combination is not tolerated or is unsuitable [5].

Figure 1: Clinical examples of different types and severity of acne. Examples include comedonal acne, mild inflammatory acne, moderate inflammatory acne, severe nodulocystic acne, atrophic acne scarring, post-inflammatory hyperpigmentation, adult female acne and truncal acne. Images are AI-generated for educational and illustrative purposes

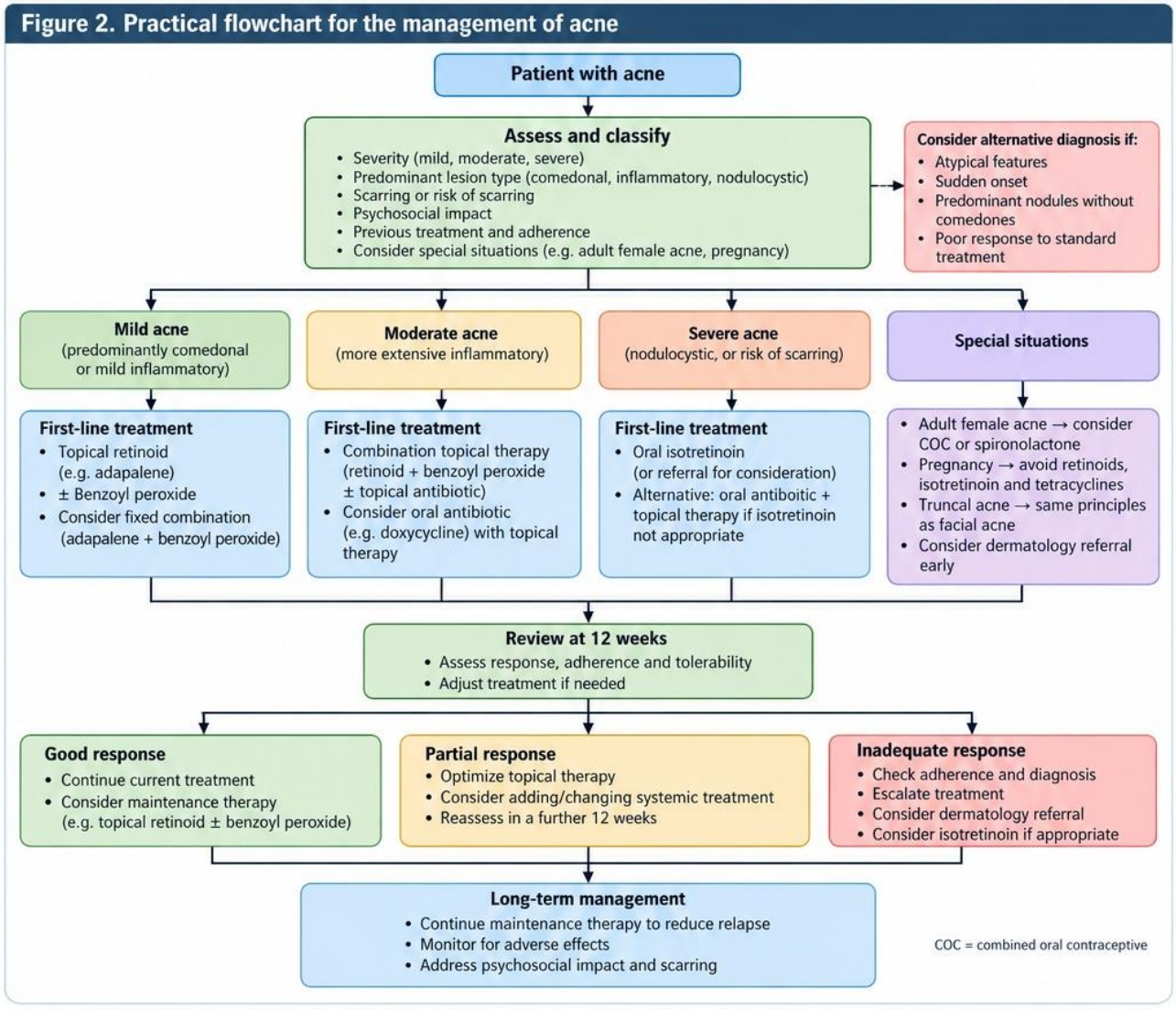

Figure 2: Practical flowchart for the management of acne vulgaris. A stepwise approach to clinical assessment, severity classification, initial treatment, review at approximately 12 weeks, treatment escalation and long-term maintenance. The flowchart is AI-generated for educational purposes and has been clinically reviewed for this article

Practical Approach to Acne Management

A simple clinical approach is:

1. Assess

Confirm the diagnosis and assess lesion type, severity, scarring risk and psychological impact.

2. Classify

Determine whether acne is predominantly comedonal, inflammatory, nodular or severe.

3. Start appropriate combination treatment

Use topical retinoids, benzoyl peroxide and/or other appropriate topical agents according to severity.

4. Escalate when necessary

Consider oral doxycycline or lymecycline for moderate-to-severe inflammatory disease. Consider hormonal therapy in selected female patients.

5. Refer early when indicated

Refer patients with severe nodulocystic or conglobate acne, significant scarring, major psychological morbidity, diagnostic uncertainty or inadequate response to appropriate treatment.

6. Consider isotretinoin appropriately

Oral isotretinoin should be considered early in severe disease and in acne associated with scarring, substantial psychosocial burden or failure of standard therapy [3,4].

7. Review at approximately 12 weeks

Assess response, adherence, adverse effects and need for escalation.

8. Maintain the response

Consider maintenance therapy in patients at high risk of relapse.

CONCLUSION

Acne vulgaris is a chronic inflammatory disease with potentially significant physical and psychological consequences. Effective management requires more than treatment of individual lesions; it should aim to control inflammation, prevent scarring, minimise antimicrobial resistance and address the patient's psychological wellbeing.

Topical retinoids, benzoyl peroxide and combination topical therapy remain the foundation of treatment. Oral antibiotics have an important role in moderate-to-severe inflammatory acne but should be used for limited periods and alongside appropriate topical treatment. Hormonal therapy can be valuable for selected women, while oral isotretinoin remains the most effective systemic treatment for severe or refractory acne and disease with a high risk of permanent scarring.

A structured assessment, early initiation of appropriate treatment and timely escalation can improve outcomes and reduce the long-term burden of acne.

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