Ministry of Health Malaysia

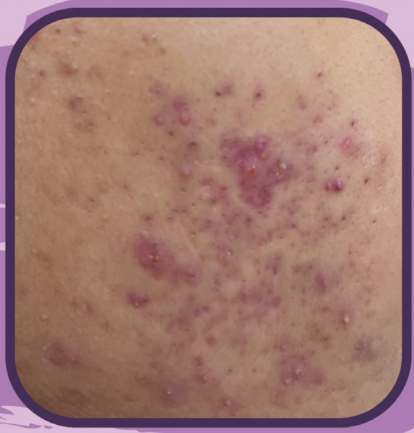
Dermatological Society of Malaysia

Academy of Medicine Malaysia

QUICK REFERENCE FOR HEALTH CARE PROVIDERS

MANAGEMENT OF ACNE VULGARIS

(SECOND EDITION)



KEY MESSAGES

1. Acne vulgaris is a chronic inflammatory skin disease of the pilosebaceous units, commonly affecting adolescents & young adults.
2. Acne vulgaris affects the face & trunk. It is characterised by non-inflammatory lesions (open & closed comedones) & inflammatory lesions (papules, pustules, nodules & cysts).
3. Four pathogenic factors in acne vulgaris are increased sebum production, altered follicular keratinisation, *Cutibacterium acnes* colonisation & inflammation of the pilosebaceous unit.
4. Risk & aggravating factors for acne vulgaris include adolescence, positive family history of acne vulgaris in first degree relatives, high glycaemic load diet, dairy products, sweetened beverages & food, & unhealthy fat intake.
5. Acne vulgaris is diagnosed clinically but laboratory investigations may be indicated in some cases.
6. Comprehensive Acne Severity Scale (CASS) may be used for grading of acne severity in clinical practice.
7. Topical therapy is the mainstay of treatment in mild to moderate acne vulgaris.
8. Oral antibiotics may be used in moderate to severe acne vulgaris but should not be used for more than 4 months.
9. Isotretinoin is indicated for severe nodulocystic acne & should only be prescribed by a dermatologist.
10. Patients with moderate to severe acne vulgaris (e.g. nodulocystic acne) should be referred early to a dermatologist. Patients with acne vulgaris who exhibit suicidal behaviour should be referred urgently to a psychiatrist.

This Quick Reference provides key messages & summarises the main recommendations in the Clinical Practice Guidelines (CPG) Management of Acne Vulgaris (Second Edition).

Details of the evidence supporting these recommendations can be found in the above CPG, available on the following websites:
Ministry of Health Malaysia: www.moh.gov.my
Academy of Medicine Malaysia: www.acadmed.org.my
Dermatological Society of Malaysia: www.dermatology.org.my

CLINICAL PRACTICE GUIDELINES SECRETARIAT
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DIAGNOSIS & INVESTIGATIONS

Acne vulgaris is diagnosed clinically based on the presence of:

- non-inflammatory lesions (NIL) – open **(Figure 1)** & closed comedones **(Figure 2)**
- inflammatory lesions (IL) – papules, pustules **(Figure 3)**, nodules & cysts **(Figure 4)**

Investigations are only required to rule out other diseases which may be associated with acne e.g. polycystic ovarian syndrome, Cushing's syndrome or androgen-secreting tumour.

- Microbiological & endocrinological investigations may be performed to rule out other conditions that may mimic acne vulgaris.

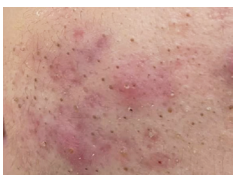


Figure 1: Open comedones

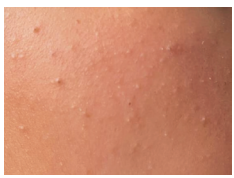


Figure 2: Closed comedones

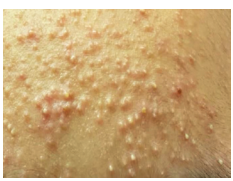


Figure 3: Papules & pustules

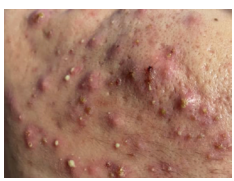


Figure 4: Pustules, nodules and cyst

ASSESSMENT OF SEVERITY

CASS is a simple & validated tool to assess acne severity in clinical practice. Assessment is done at a distance of 2.5 metres away for acne on the face, chest & back.

COMPREHENSIVE ACNE SEVERITY SCALE (CASS)

GRADE		DESCRIPTION
Clear	0	No lesions to barely noticeable ones. Very few scattered comedones & papules.
Almost clear	1	Hardly visible from 2.5 metres away. A few scattered comedones, few small papules & very few pustules.
Mild	2	Easily recognisable; less than half of the affected area is involved. Many comedones, papules & pustules.
Moderate	3	More than half of the affected area is involved. Numerous comedones, papules & pustules.
Severe	4	Entire area is involved. Covered with comedones, numerous pustules & papules, a few nodules & cyst.
Very severe	5	Highly inflammatory acne covering the affected area, with nodules & cyst present.

[Refer to CPG Management of Acne Vulgaris (Second Edition) for photo illustrations of different CASS severity]

TREATMENT

Treatment of acne vulgaris is based on the grade & severity of acne. Its goals include resolution of lesions, reduction of psychological morbidity & prevention of scars. The treatment can be divided into pharmacological & physical therapies.

a. Topical treatment

- Topical benzoyl peroxide (BPO) monotherapy or in combination with other topical therapy should be given in mild to moderate acne vulgaris.
- Topical retinoids (e.g. tretinoin & adapalene) monotherapy should be used in non-inflammatory acne vulgaris or in combination with other therapies in inflammatory acne.
- Topical antibiotics (e.g. clindamycin) should not be used as monotherapy in acne vulgaris to prevent bacterial resistance.
- Topical azelaic acid (AA) may be used in acne vulgaris, especially in patients with post-inflammatory hyperpigmentation.
- Combination topical therapy should be given in moderate acne vulgaris.

b. Systemic treatment

- Oral doxycycline, tetracycline or erythromycin should be used for moderate to severe acne vulgaris.
  - Response to these antibiotics should be evaluated at 6 - 8 weeks.
  - Target duration of therapy should not exceed 3 - 4 months to reduce resistance.
- Isotretinoin should be prescribed for nodulocystic or severe acne vulgaris & treatment-resistant moderate acne vulgaris.
  - It should only be prescribed by dermatologists.

c. Physical treatment

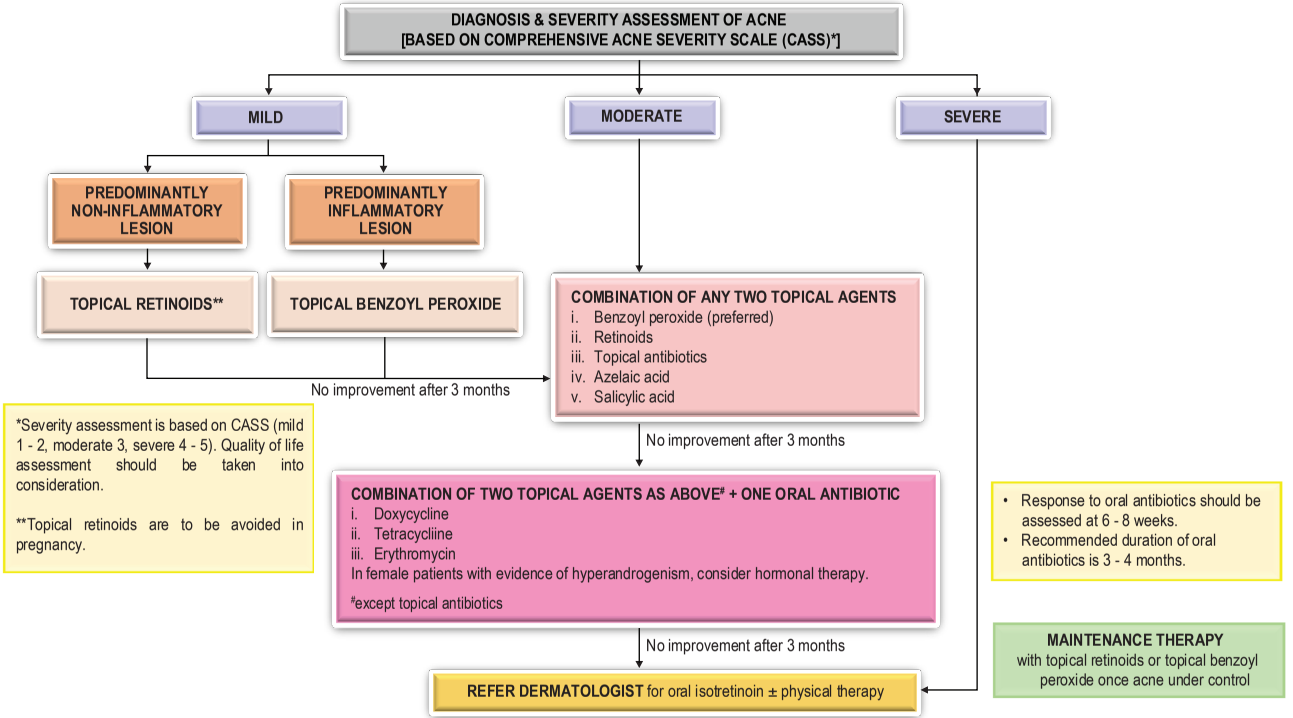
- Chemical peels may be used as an adjunct in the treatment of acne vulgaris.
  - The preferred choices are salicylic acid (SA) & glycolic acid (GA) peels.

Refer to the **Medication Table** & **Algorithm** on **the Management of Acne Vulgaris** for further details.

- Practical advice on topical BPO:
  - Start at a lower concentration of 2.5% & titrate gradually to 5 - 10% if no improvement
  - Apply once a day on the affected areas only
  - If skin irritation develops, withhold treatment & restart on alternate days once the adverse event has subsided
  - Concomitant use of moisturiser may improve tolerability
  - Bleaching of clothes may occur & the patient should be advised accordingly

- Practical advice on topical retinoids:
  - It can cause photosensitivity, thus should be applied at night
  - Apply a thin layer on the affected areas or the entire face
  - If skin irritation develops, withhold treatment & restart on alternate days once the adverse event has subsided
  - Concomitant use of moisturiser may improve tolerability
  - Adequate sun protection (e.g. using broad-spectrum sunscreen, umbrella or hat) is advisable

ALGORITHM ON THE MANAGEMENT OF ACNE VULGARIS



MEDICATION TABLE

a. Topical treatments

Drug	Recommended Dosage	Common Adverse Events	Contraindications
Benzoyl peroxide (2.5 - 10%)	Apply once to twice daily	Increased sensitivity to sunlight, skin peeling, erythema, swelling, dryness, mild burning sensation, contact dermatitis	Hypersensitivity to BPO
Tretinoin (0.025 - 0.05%)	Apply once at night or before bedtime	Initial exacerbation of acne vulgaris, skin irritation, stinging, oedema, blistering, crusting, erythema, scaling, photosensitivity, transient hypo/ hyperpigmentation	Hypersensitivity to tretinoin, eczema, broken or sunburned skin, personal or family history of cutaneous epithelioma, pregnancy
Adapalene (0.1%)	Apply once at night or before bedtime	Mild skin irritation, scaling, erythema, dryness, stinging, burning, pruritus	Hypersensitivity to adapalene, pregnancy
Clindamycin (1%)	Apply twice daily	Skin irritation, dryness, stinging, erythema, contact dermatitis	Hypersensitivity to clindamycin or lincomycin, ulcerative colitis, antibiotic-related colitis
Azelaic acid (20%)	Apply twice daily	Skin irritation, mostly burning or pruritus, occasionally erythema & scaling, photosensitivity	Hypersensitivity to propylene glycol
Sulphur & its combinations (1 - 8%)	Apply once to twice daily	Skin irritation, contact dermatitis	Hypersensitivity to sulphur, infant <2 months

b. Systemic treatments

Drug	Recommended Dosage & Duration	Common Adverse Events	Contraindications
Tetracycline	500 - 1000 mg daily in 2 divided doses for 3 - 4 months	GI disturbances, discolouration of teeth & nails, photosensitivity, visual disturbances	Hypersensitivity to tetracyclines, children ≤8 years old, pregnancy, lactation, severe renal impairment
Doxycycline	100 - 200 mg daily in 1 - 2 divided doses for 3 - 4 months	GI disturbances, photosensitivity, hypersensitivity, permanent staining of teeth, rash	Hypersensitivity to tetracyclines, children ≤8 years old, pregnancy, lactation
Erythromycin	Erythromycin Ethyl Succinate (EES): 400 - 800 mg twice daily for 3 - 4 months Erythromycin Stearate: 250 - 500 mg twice daily for 3 - 4 months	GI disturbances, rash, urticaria, headache, dizziness	Hypersensitivity to erythromycin, prolonged QT interval, uncorrected hypokalaemia or hypomagnesaemia, clinically significant bradycardia
Isotretinoin	0.1 - 1 mg/kg/day Suggested starting dose of 10 - 20 mg/day Treatment should be given until acne clearance & continued for another 4 - 8 weeks (estimated duration up to 6 months)	Dryness of skin or mucosa, exanthema, pruritus, facial erythema/ dermatitis, hair thinning, photosensitivity, muscle & joint pain, headache, dyslipidaemia Potentially serious AEs - Stevens-Johnson syndrome, toxic epidermal necrolysis, suicide ideation	Hypersensitivity to isotretinoin or any of its components, pregnancy due to teratogenicity, lactation, hypervitaminosis A, hyperlipidaemia, co-administration with tetracyclines & vitamin A (including dietary supplements)

TREATMENT OPTIONS IN PREGNANT & LACTATING WOMEN

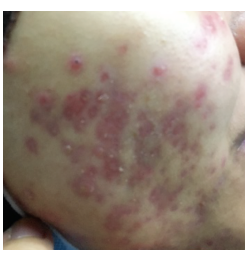
Type of treatment	Medication
Topical treatment	Benzoyl peroxide
	Topical antibiotics (clindamycin)
	Azelaic acid
	Salicylic acid
Systemic treatment	Macrolides (erythromycin, azithromycin)
Physical treatment	Chemical peel (Glycolic acid, lactic acid)
	Light-based therapy (intense pulsed light, blue- or red-light phototherapy)

TREATMENT OPTIONS IN ADOLESCENTS

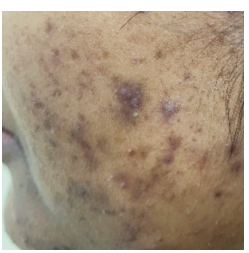
- Topical BPO & topical retinoids (tretinoin & adapalene) may be used safely in adolescents with acne vulgaris.
- Oral tetracycline derivatives (e.g. tetracycline, doxycycline & minocycline) should not be used in patients aged <8 years with acne vulgaris.
- Oral isotretinoin can be used safely in patients aged ≥12 years with severe acne vulgaris.

COMPLICATIONS OF ACNE VULGARIS

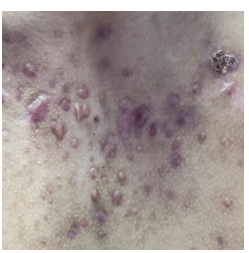
Acne vulgaris should be treated early to prevent complications. The complications that can arise from acne vulgaris are shown below.



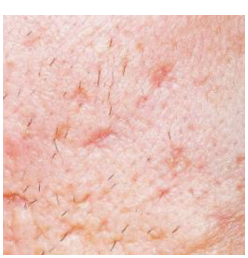
Post-acne erythema



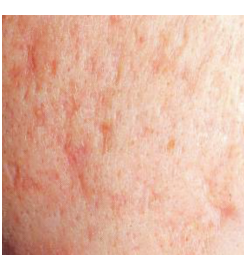
Post-inflammatory hyperpigmentation



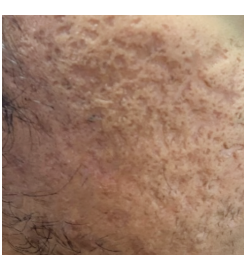
Hypertrophic & keloid scars



Icepick scar



Rolling scar



Boxcar scar

QUALITY OF LIFE

Acne vulgaris may affect the quality of life of the patients. A simple assessment tool which can be used is Cardiff Acne Disability Index (CADI).

The Cardiff Acne Disability Index

1. As a result of having acne, during the last month have you been aggressive, frustrated or embarrassed?	☐ ☐ ☐ ☐	(a) Very much indeed (b) A lot (c) A little (d) Not at all
2. Do you think that having acne during the last month interfered with your daily social life, social events or intimate personal relationships?	☐ ☐ ☐ ☐	(a) Severely, affecting all activities (b) Moderately, in most activities (c) Occasionally or in only some activities (d) Not at all
3. During the last month have you avoided public changing facilities or wearing swimming costumes because of your acne?	☐ ☐ ☐ ☐	(a) All of the time (b) Most of the time (c) Occasionally (d) Not at all
4. How would you describe your feelings about the appearance of your skin over the last month?	☐ ☐ ☐ ☐	(a) Very depressed and miserable (b) Usually concerned (c) Occasionally concerned (d) Not bothered
5. Please indicate how bad you think your acne is now:	☐ ☐ ☐ ☐	(a) The worst it could possibly be (b) A major problem (c) A minor problem (d) Not a problem

CADI score	Severity
0 - 5	Mild
6 - 10	Moderate
11 - 15	Severe

REFERRAL

The urgency for referral of patients with acne vulgaris can be divided into urgent (within 24 hours), seen early (within 2 weeks) & non-urgent (based on the availability of the appointment).

Refer patients **urgently**:
- to a dermatologist: patient suspected to have acne fulminans
- to a psychiatrist: patient has major depression or exhibits suicidal behaviour

Refer patients to be **seen early** by dermatologists in:
- moderate to severe acne (e.g. nodulocystic acne)
- severe social or psychological problems including a morbid fear of deformity (dysmorphophobia)