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# DHA TELEHEALTH CLINICAL GUIDELINES FOR VIRTUAL MANAGEMENT OF ACNE - 33

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Health Policies and Standards Department

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## INTRODUCTION

Dubai Health Authority (DHA) is the responsible entity for regulating, licensing and monitoring health facilities and healthcare professionals in the Emirate of Dubai. The Health Regulation Sector (HRS) is an integral part of DHA and was founded to fulfil the following overarching strategic objectives:

Objective #1: Regulate the Health Sector and assure appropriate controls are in place for safe, effective and high-quality care.

Objective #2: Position Dubai as a global medical destination by introducing a value-based, comprehensive, integrated and high-quality service delivery system.

Objective #3: Direct resources to ensure happy, healthy and safe environment for Dubai population.

## ACKNOWLEDGMENT

This document was developed for the Virtual Management of Acne in collaboration with Subject Matter Experts. The Health Policy and Standards Department would like to acknowledge and thank these professionals for their dedication toward improving the quality and safety of healthcare services.

### The Health Regulation Sector

### Dubai Health Authority

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## EXECUTIVE SUMMARY

Telehealth is based on Evidence Based Practice (EBP) which is the conscientious, explicit and judicious use of current best evidence in making decisions about the care of the individual patient.

It means integrating individual clinical expertise with the best available external clinical evidence and guidelines from systematic research.

EBP is important because it aims to provide the most effective care virtually, with the aim of improving patient outcomes. As health professionals, part of providing a professional service is ensuring that practice is informed by the best available evidence.

This guideline is presented in the format comprising of clinical history/symptoms, differential diagnosis, investigations and management. Identification of 'Red Flags' or serious conditions associated with the disease is an essential part of this telehealth guideline as it aids the physician to manage patients safely and appropriately by referrals to ER, family physicians or specialists for a face to face management.

Acne vulgaris is a common inflammatory disorder of the pilosebaceous unit. It is the most common cutaneous disorder affecting adolescents and young adults. Patients with acne can experience significant psychological morbidity and, rarely, mortality due to suicide. The psychological effects of embarrassment and anxiety can impact the social lives and employment of affected individuals. Scars can be disfiguring and lifelong. In one prospective study of 90 patients with acne, a significant improvement in self-esteem was found with treatment of the acne. Thus, it is vital that clinicians are familiar with acne vulgaris and its treatment.

## DEFINITIONS/ABBREVIATIONS

**Virtual Clinical Assessment:** Is the evaluation of the patient's medical condition virtually via telephone or video call consultations, which may include one or more of the following: patient medical history, physical examination and diagnostic investigations.

**Patient:** The person who receives the healthcare services or the medical investigation or treatment provided by a DHA licensed healthcare professional.

## ABBREVIATIONS

<b>BMI</b>	:	Body Mass Index
<b>DHA</b>	:	Dubai Health Authority
<b>EBP</b>	:	Evidence Based Practice
<b>EGFR</b>	:	Epidermal Growth Factor Receptor
<b>ER</b>	:	Emergency Room
<b>IGF-1</b>	:	Insulin-like Growth Factor-1
<b>OTC</b>	:	Over the Counter

## 1. BACKGROUND

- 1.1. Estimates of the prevalence of acne vulgaris in adolescents range from 35 to over 90%. Acne tends to resolve in the third decade, but it may persist into or develop newly in adulthood.
- 1.2. Post adolescent acne predominantly affects women, in contrast to adolescent acne, which has a male predominance.

## 2. SCOPE

- 2.1. Telehealth services in DHA licensed Health Facilities.

## 3. PURPOSE

- 3.1. To support the implementation of Telehealth services for patients with complaints of Acne in Dubai Health Authority (DHA) licensed Health Facilities

## 4. APPLICABILITY

- 4.1. DHA licensed physicians and health facilities providing Telehealth services.
- 4.2. Exclusion for Telehealth services are as follows
  - 4.2.1. Emergency cases where immediate intervention or referral is required
  - 4.2.2. Prescribe Narcotics, Controlled or Semi-Controlled medications`

## 5. RECOMMENDATION

- 5.1. Virtual Clinical Assessment
  - 5.1.1. Causes

- a. Soaps, detergents, and astringents remove sebum from the skin surface but do not alter sebum production. Repetitive mechanical trauma caused by scrubbing with these agents may worsen the disorder by promoting the development of inflammatory lesions.
- b. Turtlenecks, bra straps, shoulder pads, orthopedic casts, and sports helmets
- c. Diet — The role of diet in acne is an evolving concept. It is suggested that natural hormonal components of milk or other bioactive molecules in milk could exacerbate acne
- d. Family history — Individuals with close family members with acne are at increased risk for the disorder.
- e. Stress — psychological stress can exacerbate acne
- f. Insulin resistance — Insulin resistance may play a role in acne. Insulin resistance may stimulate increased androgen production and is associated with increased serum levels of insulin-like growth factor-1 (IGF-1), a finding linked to increased facial sebum excretion.
- g. Body mass index — A significant association is noted between rising BMI and increased risk for acne only among females.

#### 5.1.2. Clinical History

Acne vulgaris typically affects those areas of the body that have the largest, hormonally-responsive sebaceous glands, including the face, neck, chest, upper back, and upper arms. In addition to the typical lesions of acne vulgaris (e.g., open comedos, closed comedos, and inflammatory lesions), scarring and post inflammatory hyperpigmentation can occur, which can be greatly distressing for patients. Post inflammatory hyperpigmentation is most common in patients with darker complexions, and an individual hyperpigmented macule may take several months or more to resolve without treatment.

Adult women may present with acne involving the lower face and neck that is often associated with premenstrual flares. These women seem to benefit from hormonal therapies for acne. Premenstrual flares of acne appear to be more common in women over the age of 33 than in women aged 20 to 33 years.



Young adolescents often have primarily comedonal acne consisting of noninflammatory lesions (closed and/or open Comedos) involving the forehead, nose and chin. As the acne



progresses, patients develop inflammatory lesions (papules, pustules, and nodules. Comedos can become extensive in some patients.

Numerous open comedones are present on the chin in the above picture

Estimations of acne severity are patient-specific and depend on a number of factors including:

- a. The clinical type of lesions
- b. Presence of scarring
- c. Presence of draining lesions or sinus tracts
- d. Lack of therapeutic response
- e. The psychological impact of acne

As an example, patients with inflammatory, nodular acne are often considered to have severe acne.

Similarly, a patient without nodules but who has numerous inflammatory



papules and pustules and notable scarring could also be classified as having severe disease.

## 6. DIFFERENTIAL DIAGNOSIS

Although acne vulgaris is a common condition that clinicians may feel they can accurately diagnose, a variety of disorders need to be considered in the differential diagnosis.

6.1. Non-acne dermatoses — Some of the conditions in the differential diagnosis of acne include:

6.1.1. Rosacea – Acne vulgaris is distinguished from acne rosacea by the presence of comedos and the absence of telangiectasias. Common features of rosacea include erythema, telangiectasias, and papules or pustules on the central face.



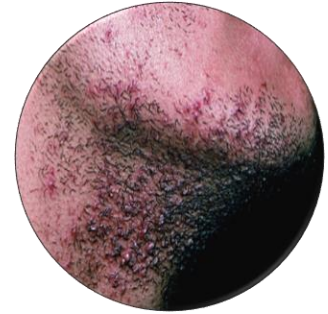
6.1.2. Perioral dermatitis – Perioral dermatitis (also known as periorificial dermatitis) is characterized by small, grouped, erythematous papules in a perioral (or occasionally perinasal or periorbital) distribution. When the perioral skin is involved, a rim of spared skin is usually seen around the vermilion border of the lip.



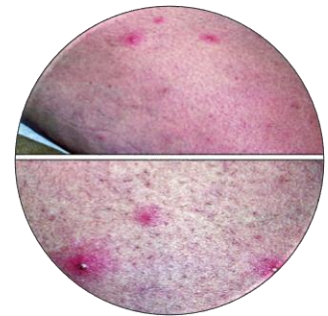
6.1.3. Sebaceous hyperplasia – Visible enlargement of sebaceous glands is termed sebaceous hyperplasia. It most commonly occurs in adults with a history of oily skin. These growths are umbilicated yellowish papules are most commonly found on the forehead and cheeks. These lesions may resemble basal cell carcinomas.



6.1.4. Pseudofolliculitis barbae and acne keloidalis nuchae – These two conditions occur most commonly in individuals of African origin and are likely related to the configuration of the hair follicle. It is thought that short shaved or clipped hairs curl back towards the skin, penetrate the skin, and cause a foreign-body inflammatory reaction. Inflammatory papules and pustules occur, which may result in keloidal scarring as the lesions heal. The beard area (pseudofolliculitis barbae) and the nuchal area (acne keloidalis nuchae) are typically involved.



6.1.5. Folliculitis – Staphylococcal, eosinophilic, or pseudomonal folliculitis may mimic inflammatory acne. Comedos are absent, and lesions are usually monomorphic, unlike the polymorphous lesion in different stages of development that are typical of acne.



6.1.6. Nevus comedonicus – A lesion presenting at birth or in childhood, in which grouped or a linear arrangement of comedos are noted.

6.1.7. Hidradenitis suppurativa – Hidradenitis suppurativa is a chronic inflammatory skin disorder characterized by recurrent, inflamed nodules

and abscesses with a predilection for intertriginous skin areas, such as the axilla, groin, perianal, perineal, and inframammary regions. Additional features include comedones, sinus tracts, and scarring. Open comedones and inflammatory papules in the axilla



6.1.8. Tuberous sclerosis – Facial angiofibromas associated with tuberous sclerosis usually appear in childhood. These lesions commonly present as persistent, 1 to 3 mm pink or red papules on the nose and medial cheeks.

6.2. Acneiform eruptions — There are multiple disorders in which acne-like eruptions occur, unassociated with true acne vulgaris. These include the following:

6.2.1. Drug-induced acne — Drug-induced acne typically presents with a monomorphic inflammatory papular eruption (as opposed to the polymorphous eruption with lesions in varying stages seen with acne vulgaris). Glucocorticoid-induced eruptions are also referred to as "steroid folliculitis."

6.2.2. Acne cosmetica — Cosmetic products that contain comedogenic ingredients can induce the formation of acne lesions. Heavy, oil-based hair products are still commonly used and may contribute to the development of acne on the forehead.

- 6.2.3. Irritant reactions to cosmetic products can also produce eruptions that resemble acne vulgaris. Inflammatory papules or pustules may occur within hours after the application of the inciting product.
- 6.2.4. EGFR inhibitor acneiform eruption — Epidermal growth factor receptor (EGFR) inhibitors and other tyrosine kinase inhibitors used to treat cancers are known to cause an inflammatory acneiform eruption involving the face, neck and upper trunk in most patients receiving these medications.
- 6.2.5. Occupational acne – which can occur in response to exposure to certain chemicals, including insoluble cutting oils, coal tar derivatives, and chlorinated hydrocarbons.
- 6.2.6. Tropical acne — Tropical acne occurs upon exposure to elevated environmental temperatures and may be seen in tropical countries or other situations (e.g., occupations) in which individuals are exposed to extreme heat. Large inflammatory nodules are seen on the trunk and buttocks.
- 6.2.7. Radiation acne — Treatment with ionizing radiation can result in the appearance of comedos as acute radiation dermatitis resolves. Ionizing radiation induces follicular epithelial metaplasia, creating follicular hyperkeratotic plugs.

- 6.2.8. Apert syndrome — Apert syndrome is an autosomal dominant disorder associated with synostoses of bone in the hands, feet, cranium, and vertebral bodies. A diffuse acneiform eruption on the arms, buttocks, and thighs is seen. The acneiform eruption is difficult to treat.

## 7. CLINICAL ASSESSMENT

- 7.1. The diagnosis of Acne is usually made clinically based on the appearance and location of the lesions. This can be done by:
- 7.1.1. Virtual video consultation
  - 7.1.2. Viewing High resolution photograph sent by the patient
- 7.2. Deciding on the appropriate course of treatment for acne requires a comprehensive assessment that includes:
- 7.2.1. Clinical type and severity of acne (e.g., comedonal, papulopustular, mixed, nodular)
  - 7.2.2. Skin type (e.g., dry, oily)
  - 7.2.3. Presence of acne scarring
  - 7.2.4. Presence of post inflammatory hyperpigmentation
  - 7.2.5. Menstrual cycle history and history of signs of hyperandrogenism in women (Identifies need to consider laboratory workup and hormonal therapies)
  - 7.2.6. Current skin care regimen and acne treatment history

7.2.7. History of acne-promoting cosmetic products and medications

7.2.8. Psychologic impact of acne on the patient

## 8. REFERRAL CRITERIA

8.1. Refer to Family Physician/Specialist

8.1.1. Are at risk of, or are developing, scarring despite primary care therapies

8.1.2. Depression - acne can often cause intense feelings of anxiety and stress, which can sometimes make people with the condition become socially withdrawn. This combination of factors can lead to people with acne becoming depressed.

8.1.3. Have moderate acne that has failed to respond to treatment which has included two courses of oral antibiotics, each lasting three months. Failure is probably best based upon a subjective assessment by the patient

8.1.4. Are suspected of having an underlying endocrinological cause for the acne (such as polycystic ovary syndrome) that needs assessment

8.1.5. Have severe or nodulocystic acne

8.1.6. Have severe social or psychological problems, including a morbid fear of deformity (dysmorphophobia)

8.1.7. Have a severe variant of acne such as acne fulminans or gram-negative folliculitis

8.1.8. Patients need medication that can't be prescribed virtually

## 8.2. Treatment principles

Medical therapies for acne target one or more of four key factors that promote the development of acne lesions: follicular hyperproliferation and abnormal desquamation, increased sebum production, Cutibacterium (formerly Propionibacterium) acnes proliferation and inflammation.

These factors are targeted as follows:

### 8.2.1. Follicular hyperproliferation and abnormal desquamation

- a. Topical retinoids
- b. Oral retinoids
- c. Azelaic acid
- d. Salicylic acid
- e. Hormonal therapies

### 8.2.2. *C. acnes* proliferation

- a. Benzoyl peroxide
- b. Topical and oral antibiotics
- c. Azelaic acid

### 8.2.3. Inflammation

- a. Oral tetracyclines
- b. Topical retinoids



c. Azelaic acid

8.3. Physicians should keep in their mind the following:

- 8.3.1. Topical retinoids are beneficial for both comedonal (noninflammatory) and inflammatory acne and should be included in the initial management of most patients.
- 8.3.2. Patients with an inflammatory component often benefit from antimicrobial therapies (e.g., benzoyl peroxide or topical antibiotics). Antimicrobial agents reduce the number of proinflammatory *C. acnes* colonizing the skin.
- 8.3.3. Patients with moderate to severe inflammatory acne often warrant more aggressive treatment with oral antibiotics. Antibiotics in the tetracycline class are most frequently used, and appear to have both antibacterial and anti-inflammatory properties.
- 8.3.4. The use of benzoyl peroxide with topical or oral antibiotics decreases the emergence of antibiotic resistant bacteria. Therefore, use of benzoyl peroxide is recommended in patients receiving antibiotic therapy.
- 8.3.5. Androgens stimulate increased sebum production, which contributes to the formation of acne. Hormonal therapy may benefit women with moderate to severe acne, even in the absence of a hyperandrogenic state.

8.3.6. Patients should be given realistic expectations regarding timelines for improvement. Improvement in acne is dependent upon both the prevention and resolution of acne papules, pustules, and nodules. At least 2 to 3 months of consistent adherence to a therapeutic regimen is often necessary prior to concluding that treatment is ineffective. Adjustments to the regimen also may be needed.

8.3.7. Acne typically recurs over years, and maintenance therapy is an important component of acne management.

8.4. As per DHA Standards for Telehealth Services, medications that can be prescribed for dermatological conditions are topical and oral antibiotics and all other over the counter medication (OTC)

## 9. TREATMENT

9.1. General approach — An example of an initial approach to acne based upon the principles above is outlined below.

9.1.1. Comedonal (noninflammatory) acne

a. Topical retinoid (alternatives include azelaic acid and salicylic acid)

9.1.2. Mild papulopustular and mixed (comedonal and papulopustular) acne

a. Topical antimicrobial (e.g., benzoyl peroxide alone or benzoyl peroxide +/- topical antibiotic) AND

b. Topical retinoid OR

- c. Benzoyl peroxide AND topical antibiotic (for patients who cannot tolerate a retinoid or who require a simplified treatment regimen)

9.1.3. Moderate papulopustular and mixed acne

- a. Topical retinoid AND
- b. Oral antibiotic AND
- c. Topical benzoyl peroxide

9.1.4. Severe acne (e.g., nodular acne)

- a. Topical retinoid AND
- b. Oral antibiotic AND
- c. Topical benzoyl peroxide
- d. Oral isotretinoin and hormonal therapy (refer to face to face consultation).

9.2. Consistent adherence to acne therapy is critical for achieving clinical improvement. When recommending topical therapy, the clinician should design a regimen that is feasible for the patient. This should involve a discussion with the patient to ensure that each component of the treatment regimen is acceptable to the patient.

9.3. A sample regimen for a patient with mild inflammatory facial acne who is using a topical retinoid, topical benzoyl peroxide, and topical clindamycin is as follows:

- 9.3.1. Morning: Wash face with a gentle facial cleanser. Apply a thin layer of a fixed-dose combination benzoyl peroxide/clindamycin gel to the entire

face. (An alternative regimen could require the patient to wash the face with a benzoyl peroxide cleanser followed by application of a thin layer of topical clindamycin to the entire face.)

9.3.2. Night: Wash face with a gentle facial cleanser. Apply a thin layer of the topical retinoid to the entire face.

9.4. Some patients may prefer the use of fixed-dose combination products to simplify treatment.

9.5. However, the cost of such treatments may be higher than single-active ingredient agents.

9.6. The selection of the delivery system for topical acne medications also may help to improve the likelihood of adherence to treatment. The choice depends upon the patient's skin type (dry versus oily) and preference. Some gels have a drying effect; they may be preferred by patients with oily skin. Creams and lotions tend to be moisturizing. Solutions are drying but they cover large areas more easily than other preparations, and foams are easy to apply to hair-bearing areas. Pledgets are single-use absorbent pads impregnated with medication. They are convenient to use and facilitate the spreading of medication over large areas.

9.7. Topical retinoids

9.7.1. Topical retinoids are used for the treatment of both noninflammatory and inflammatory acne and should be included in the initial management of most patients.

9.7.2. The first topical retinoid for the treatment of acne, topical all-trans retinoic acid (topical tretinoin), is still extensively used. Adapalene and tazarotene are other effective topical retinoids.

9.7.3. Topical retinoids are also useful as maintenance therapy for patients who have responded to initial treatment. The use of retinoids as maintenance therapy can diminish the prolonged use of antibiotics.

#### 9.8. Administration

9.8.1. Topical tretinoin, isotretinoin, adapalene, and tazarotene are available in a variety of vehicles and concentrations. Combination gels containing a retinoid and an antimicrobial are also available.

#### 9.9. Dosage:

9.9.1. The topical retinoids are applied once daily and traditionally at night due to photo lability reported with tretinoin.

9.9.2. Adapalene is more light-stable. In addition, newer formulations of tretinoin, tretinoin gel microsphere, and micronized tretinoin 0.05% in a hydrogel vehicle, are less affected by light exposure than their precursors

- 9.9.3. Topical tretinoin should not be applied at the same time as benzoyl peroxide. Tretinoin is less stable when exposed to benzoyl peroxide due to oxidation, an effect magnified during light exposure.
- 9.9.4. Adapalene, tretinoin gel microsphere, micronized tretinoin gel, and tazarotene remain more stable than tretinoin in the presence of benzoyl peroxide. A combination product, containing adapalene and benzoyl peroxide, is available.
- 9.10. Patient advises:
- 9.10.1. Patients should be directed to apply a thin layer of the topical retinoid to the affected areas; a pea-sized amount of medication is usually sufficient to cover the face. Due to the preventive effect of topical retinoids on acne, the medication should be applied to the entire affected area, not as spot treatment of individual lesions.
- 9.10.2. Skin should be dry at the time of application.
- 9.10.3. Skin irritation is a common and expected side effect of topical retinoid therapy. Irritation may be minimized by starting with the lowest concentration of a topical retinoid product and then increasing the potency as tolerated.
- 9.11. Adverse effects:

- 9.11.1. Topical retinoids cause irritation, dryness, and flaking of the skin, an effect most notable during the first month of therapy. To minimize irritation, patients should avoid the concomitant use of over-the-counter irritating products, such as harsh soaps, toners, astringents, and alpha hydroxy acid or salicylic acid products. A gentle non-soap cleanser should be recommended. Delaying application of the retinoid for at least 20 minutes after washing and drying the face may also be helpful.
- 9.11.2. If irritation is a problem, a decrease in the frequency of application to every other or every third night can be considered, and the frequency of application can be increased as tolerance improves. The fine skin flaking that is often seen can be gently exfoliated with a wash cloth. A noncomedogenic facial moisturizer can be applied on top of the retinoid if needed.
- a. Topical retinoids are not true photosensitizing drugs, but patients using topical retinoids have described symptoms of increased sun sensitivity. This is thought to be due to thinning of the stratum corneum leading to a decreased barrier against ultraviolet light exposure, as well as an enhanced sensitivity due to the presence of cutaneous irritation. The use of sun-protective

clothing and/or sunscreen is recommended, particularly when prolonged sun exposure is anticipated.

- b. Micronized tretinoin 0.05% gel contains soluble fish proteins. The drug should be used with caution in patients with a known allergy to fish.
- c. The use of topical retinoids is not recommended in pregnancy.

#### 9.12. Topical antimicrobials

9.12.1. The most commonly used topical antimicrobials include benzoyl peroxide, clindamycin, and erythromycin. Sulfacetamide is additional treatment options.

9.12.2. Combination therapy with a topical antimicrobial plus a topical retinoid appears to be more effective than either agent alone, and adding an antimicrobial agent is recommended when retinoids are used for the treatment of patients with inflammatory acne.

#### 9.13. Benzoyl peroxide

9.13.1. In addition to its antibacterial properties, benzoyl peroxide is also comedolytic.

9.13.2. Increased concentrations of benzoyl peroxide can lead to increased skin irritation. Irritation may appear as erythema, scaling, xerosis, or stinging, tightening, or burning sensations



- 9.13.3. Patients should also be advised that benzoyl peroxide can cause bleaching of the hair and clothing.
- 9.13.4. Antibiotics may promote the appearance of resistant strains of *C. acnes* when used alone. Resistance is diminished by combination use with benzoyl peroxide.
- 9.13.5. Tretinoin and benzoyl peroxide should not be applied simultaneously to the skin due to the oxidizing effect of benzoyl peroxide on tretinoin. If both agents are prescribed, benzoyl peroxide should be applied in the morning and tretinoin in the evening.
- 9.13.6. Adapalene, the microsphere formulation of tretinoin, and tazarotene are stable in the presence of benzoyl peroxide.
- 9.14. Topical antibiotics
- 9.14.1. Topical antibiotics reduce the numbers of *C. acnes* in the sebaceous follicles and thereby suppress inflammation in patients with inflammatory acne. In addition to erythromycin and clindamycin, topical preparations of sulfacetamide and dapsone are available. All topical antibiotics may occasionally cause skin irritation.
- 9.15. Erythromycin and clindamycin
- 9.15.1. Topical erythromycin and clindamycin are the most common topical antibiotics used for the treatment of acne.

- 9.15.2. Erythromycin is available in gel and solution formulations; clindamycin is available as a gel, solution, lotion, foam, or as pledgets (antibiotic impregnated wipes).
- 9.15.3. Erythromycin and clindamycin are often used in 2% and 1% concentrations, respectively.
- 9.15.4. Topical erythromycin and clindamycin should not be used as monotherapy for acne, as evidence shows better treatment efficacy when these drugs are combined with retinoids or benzoyl peroxide . In addition, the use of benzoyl peroxide with antibiotics decreases the occurrence of bacterial resistance.
- 9.15.5. Combination gels containing benzoyl peroxide or tretinoin combined with an antibiotic are available.
- 9.16. Sulfacetamide
- 9.16.1. Sulfacetamide is an antibacterial agent that inhibits *C. acnes*.
- 9.16.2. It is often combined with 5% sulfur.
- 9.16.3. Sulfacetamide should not be used in patients with sulfa or sulfonamide allergies
- 9.17. Combined Therapy:
- For patients with inflammatory acne, combining a topical retinoid with antimicrobial agent(s) optimizes therapy. Combination therapy with a topical antibiotic plus a

topical retinoid appears to be more effective than either agent alone. The use of benzoyl peroxide with topical or oral antibiotics is also recommended. Adding benzoyl peroxide reduces the development of antibiotic resistance.

9.17.1. Topical retinoid and topical antimicrobial

The topical retinoid and topical antimicrobial fixed-dose combination:

- a. Clindamycin 1.2% and tretinoin 0.025% gel
- b. Benzoyl peroxide 2.5% and adapalene 0.1% gel
- c. Benzoyl peroxide 2.5% and adapalene 0.3% gel

9.17.2. Antibiotics and benzoyl peroxide

Three fixed-dose topical benzoyl peroxide and antibiotic combination products are available in the United States:

- a. Benzoyl peroxide 5% and clindamycin 1% gel
- b. Benzoyl peroxide 5% and erythromycin 3% gel
- c. Benzoyl peroxide 2.5% and clindamycin 1.2% gel
- d. Benzoyl peroxide 3.75% and clindamycin 1.2% gel

When oral antibiotic therapy is indicated, concomitant use of topical benzoyl peroxide is also advised to decrease antibiotic resistance.

For patients who may not tolerate continuous use of benzoyl peroxide, pulse therapy of benzoyl peroxide or use between antibiotic courses has been suggested.

9.17.3. Azelaic Acid:

- a. The product is available in a 15% gel and 20% cream.
- b. Azelaic acid 20% cream is effective for the treatment of both inflammatory and noninflammatory acne, and has comparable efficacy with tretinoin 0.05% cream, benzoyl peroxide 5% gel, or topical 2% erythromycin for mild to moderate acne .
- c. The 15% gel is FDA approved only for the treatment of rosacea, although it is approved for the treatment of acne.

9.17.4. Salicylic Acid:

- a. Topical salicylic acid is an alternative comedolytic agent that is useful for patients who cannot tolerate or cannot obtain a topical retinoid

9.17.5. Oral antibiotics

- a. Oral antibiotics effective for the management of inflammatory acne.
- b. Utilization of these drugs is primarily indicated for patients with moderate to severe inflammatory acne and forms of inflammatory acne that are resistant to topical treatment.
- c. Oral Antibiotics used in the treatment of acne include tetracycline, doxycycline and minocycline
- d. Tetracyclines - initiated at a dose of 500 mg twice daily, although 250 mg twice daily may also be effective.

- e. Doxycycline - 50 to 100 mg twice daily or 100 mg once daily.
- f. Minocycline - is usually prescribed as 50 mg taken one to three times daily
- g. Erythromycin - 500 mg twice daily.

9.17.6. Non-prescription Therapy

- a. In addition to benzoyl peroxide, other nonprescription agents including salicylic acid, sulfur, alpha hydroxy acid, and tea tree oil have been used in the treatment of acne.

9.17.7. Procedural Therapy

- a. Treatment of acne vulgaris with lasers, visible light, chemical peels, and other procedures warrants a referral to a dermatologist.

9.18. Conservative Home Management

Patients frequently ask questions about general skin care.

- 9.18.1. Patients should apply a gentle synthetic detergent cleanser with their fingers, and rinse with warm (not hot) water twice daily.
- 9.18.2. Synthetic detergent cleansers possess a pH of 5.5 to 7, which is close to normal skin pH, while soap has a pH of 9 to 10. The lower pH of synthetic detergents, such as Cetaphil, minimizes skin irritation and dryness
- 9.18.3. Patients should not aggressively scrub the skin; gentle massage with the fingertips is enough for cleansing.

- 9.18.4. Antibacterial soaps such as triclosan, povidone-iodine, and chlorhexidine can improve acne vulgaris
- 9.18.5. Water-based lotions, cosmetics, and hair products are less comedogenic than oil-based products. Patients should be encouraged to seek out non-comedogenic skin care and cosmetic products.
- 9.18.6. Patients should be advised not to pick their acne lesions, as this may exacerbate scarring.
- 9.19. Pregnancy and acne therapy
- 9.19.1. Several treatments for acne are contraindicated in pregnancy. In particular, oral isotretinoin and topical tazarotene are classified as pregnancy category X drugs, and must never be given to pregnant women or women who are attempting pregnancy.
- 9.19.2. In deciding whether to treat acne during pregnancy, as well as choosing a specific therapy, careful consideration should be given to the grade of acne, the patient's risk tolerance, and the preferences of the patient's obstetrical provider. If acne therapy is desired, reasonable options include oral or topical erythromycin, topical clindamycin, and topical azelaic acid.

## 10. MANAGEMENT

- 10.1. Refer to APPENDIX 1 for the Virtual Management of Acne Algorithm

## REFERENCES

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## APPENDIX 1 – VIRTUAL MANAGEMENT OF ACNE ALGORITHM

