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## MEDLINE Abstracts: Management of Acne

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### MEDLINE Abstracts: Management of Acne

What's new concerning the management of acne? Find out in this easy-to-navigate collection of recent MEDLINE abstracts compiled by the editors at Medscape Nurses.

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#### Acne. Myths and Management Issues

Clearihan L

*Aust Fam Physician.* 2001;30:1039-1044

**Background:** Acne is one of the commonest dermatological problems, experienced by approximately 80% of Western adolescents. If left untreated it can be the source of significant physical sequelae and psychological problems. Prevalence studies show that acne is not just a problem of youth but for some, it persists into middle age.

**Objective:** To review both the causes of acne and current acne management issues in relation to problems and options for improving outcomes.

**Discussion:** The earlier acne is treated the more likely scarring will be minimised, so a proactive approach is important. The development of oral isotretinoin has offered those with severe, nodulocystic acne the chance of not only disease containment but suppression. However, it is still the only available treatment that targets all four pathological processes involved in acne. The development of antibiotic resistance is becoming a global problem and causing a need to revise our approach to acne.

#### Acne Prevalence, Knowledge About Acne and Psychological Morbidity in Mid-adolescence: a Community-Based Study

Smithard A, Glazebrook C, Williams HC

*Br J Dermatol.* 2001;145:274-279

**Background:** Acne vulgaris is a distressing condition that affects the majority of adolescents, but its impact on mental health in this age group is poorly understood.

**Objectives:** To determine the prevalence of acne, knowledge about acne and rates of help-seeking behaviour in English teenagers. It was hypothesized that presence of acne would be associated with higher rates of emotional and behavioural difficulties.

**Methods:** Three hundred and seventeen pupils (80% response rate) aged 14-16 years participated from a comprehensive school in Nottingham. An age-appropriate, validated measure of emotional well-being, the Strengths and Difficulties Questionnaire (SDQ), and an Acne Management Questionnaire were used to assess participants' psychological health, level of acne knowledge and help-seeking behaviour. Acne severity was by graded by visual facial examination using an adaptation of the Leeds Acne Grading Technique.

**Results:** There was a prevalence of acne in 50% of the study sample, with 11% of participants having moderate to severe acne (> 20 inflammatory lesions). Participants with definite acne (12+ lesions) ( $P < 0.01$ ) and girls ( $P < 0.05$ ) had higher levels of emotional and behavioural difficulties. Participants with acne were nearly twice as likely as those without acne to score in the abnormal/borderline range of the SDQ (32% vs. 20%; odds ratio 1.86, 95% confidence interval 1.03-3.34). Knowledge about the causes of acne was low (mean 45%), and was unrelated to acne status. Fewer than a third of participants with definite acne had sought help from a doctor.

**Conclusions:** Acne is a common disorder in English adolescents and appears to have a considerable impact on emotional health in this age group. Low levels of acne knowledge and poor acne management are concerns that could be amenable to a school-based education programme.

## Treatment of Acne Vulgaris and Prevention of Acne Scarring: Canadian Consensus Guidelines

Madden WS, Landells ID, Poulin Y, et al  
*J Cutan Med Surg.* 2000;4(suppl 1):S2-S13

Acne affects approximately 95% of the population at some point during their lifetime. This common disorder can range from mild to severe forms, cause sometimes extensive scarring, and can last well into the fourth and fifth decades. Effective therapeutic agents are available to both treat acne and prevent ongoing disease. Despite this, dermatologists frequently see patients with significant acne scarring because many patients delay seeking medical attention for acne and many practitioners procrastinate over using effective anti-scarring options. In patients who already demonstrate scarring, repeated courses of antibiotics only result in recurring acne and additional scarring. This, in turn, exacerbates the despair and other adverse psychosocial effects of the disease. There are a variety of agents and devices to help acne patients with scarring. However, successful treatment cannot be guaranteed, and in most cases residual scarring will be evident. Thus, the most effective way of managing acne scarring is to prevent its occurrence in the first place. Although we currently have a number of effective anti-acne agents to control the disease, such as antibiotics and hormonal agent's isotretinoin is the only agent that has been shown to induce long-term drug-free remission and curative potential.

## Optimal Management of Acne to Prevent Scarring and Psychological Sequelae

Layton AM  
*Am J Clint Dermatol.* 2001;2:135-141

Acne vulgaris is one of the most common inflammatory dermatoses and is seen in both the hospital setting and in general practice. Multiple factors are involved in the pathophysiology of acne, including: an alteration in the pattern of keratinization within the pilosebaceous follicles resulting in comedone formation; an increase in sebum production which is influenced by androgens; the proliferation of *Propionibacterium acnes*; and the production of perifollicular inflammation. Genetic and hormonal factors may also contribute to acne. Better understanding of the pathophysiology of the disease has led to the development of novel therapies which are directed at one or more of the implicated etiologic factors. Systemic antibiotics for acne have been the mainstay of treatment for many years. The main cause for concern following the use of systemic antibiotics is the emergence of antibiotic-resistant strains of *P. acnes*. Concomitant use of non-antibiotic therapies such as benzoyl peroxide helps to decrease the occurrence of resistance and can be effective in the treatment of resistant and nonresistant propionibacterial strains. However, no one agent is able to eradicate resistant strains completely and as resistant strains correlate to poor clinical response to therapy, prescribing strategies are required to minimize the occurrence of resistance to *P. acnes*. When assessing acne it is important to take an all embracing approach and to examine carefully for both the clinical and psychologic effects of the disease process. There are numerous forms of acne scarring and it is important to be aware of these as patients who are developing scarring merit early effective therapy. Some patients with acne will develop psychologic problems as a consequence of their condition. Even mild to moderate disease can be associated with significant depression and suicidal ideation and psychologic change does not necessarily correlate with disease severity. Acne scars themselves have been shown to produce significant psychopathology. When initiating treatment it is important to consider the aims of therapy. Treatment should be aimed at achieving clearance of acne, prevention of scarring and, where necessary, relief from any psychologic stress resulting from the acne. Therapy should be commenced early in the disease process in order to prevent scarring and it is important to select appropriate therapies according to the clinical signs and psychologic disability. It is also important to ensure that the patient is able to comply with therapy and clear guidelines regarding treatment, possible adverse effects and realistic expectations should be provided.

## Use of Isotretinoin (*Accutane*) in the United States: Rapid Increase From 1992 Through 2000

Wysowski DK, Swann J, Vega A  
*J Am Acad Dermatol.* 2002;46:505-509

**Background:** Isotretinoin, a drug approved to treat severe recalcitrant nodular acne, has been marketed in the United States since 1982. The drug is an effective treatment for acne that is refractory to other therapies, but it is a teratogen and can cause serious side effects.

**Objective:** Our purpose was to describe trends in the use of isotretinoin in the United States from marketing through year 2000 and summarize characteristics of patients and prescribers.

**Methods:** Data from 2 pharmaceutical marketing research databases, the National Prescription Audit Plus and the National Disease and Therapeutic Index, and from 2 health plan networks were obtained and analyzed.

**Results:** Retail pharmacies dispensed 19.8 million outpatient prescriptions for isotretinoin from marketing in 1982 through 2000. From 1983 through 1993, the median annual number of prescriptions was just over 800,000; between 1992 and 2000, the number of prescriptions increased 2.5-fold (250%) to nearly 2 million in year 2000. The increases registered in the health plans were somewhat larger: about 275% increases from 1995 through 1999. There is no ICD-9 code for nodulocystic acne; consequently, the type of acne treated with isotretinoin is not determinable from these data. However, between 1993 and 2000, the proportion of isotretinoin treatment for severe acne declined from 63% to 46%, whereas the proportion of treatment for mild and moderate acne increased from 31% to 49%. Data also indicated that the sex distribution of patients was nearly even, and that 63% of male patients prescribed isotretinoin were 15 to 19 years old, whereas 51% of female patients were 15 to 24 years old.

**Conclusion:** In the last 8 years, there has been a 2.5-fold (250%) increase in the number of dispensed prescriptions for isotretinoin in the United States. Data also reveal an increasing proportion of isotretinoin use for mild and moderate acne.

## Endocrinological Evaluation and Hormonal Therapy for Women With Difficult Acne

Thiboutot DM

*J Eur Acad Dermatol Venereol.* 2001;15(suppl 3):57-61

Acne vulgaris is the most common skin condition observed in the medical community. Convention is to treat this condition with a combination of comedolytics, anti-inflammatory and antibacterial topical agents, or if indicated, oral antibiotics or retinoids. In addition to these therapies, hormonal therapy is potentially an option in women whose acne is not responding to conventional treatment or if signs of endocrine abnormalities are present. This paper focuses on the use of hormonal therapy in women with severe or recalcitrant acne. After a brief description of the pathogenesis of acne vulgaris, and the conventional treatment modalities, indications for hormonal therapy are discussed. This is followed by an outline of a suggested endocrine evaluation, and interpretation of the evaluation test results. Various options for hormonal therapy are then described, including a further discussion of oral contraceptives (OCs) in the treatment of acne.

## Current Issues in Antimicrobial Therapy for the Treatment of Acne

Leyden JJ

*J Eur Acad Dermatol Venereol.* 2001;15(suppl 3):51-55

This review summarizes current information regarding the use of antimicrobial agents for the treatment of patients with inflammatory acne. A number of drugs have been used effectively as topical or systemic therapy, often in combination with benzoyl peroxide or a retinoid. Propionibacterium acnes exhibits high in vitro sensitivity to a wide range of antimicrobials, including ampicillin, clindamycin, erythromycin, tetracycline, doxycycline, nadifloxacin, ofloxacin, minocycline, cephalexin, and gentamycin. However, not all of these drugs are equally effective in penetrating the lipid-filled microcomedo and reducing numbers of P. acnes in the skin. Antimicrobial therapy, particularly systemic treatment, may be complicated by the potential for drug-drug interactions. Historically, the potential for antimicrobials to reduce the effectiveness of oral contraceptives has been a concern in the treatment of acne. However, there is evidence to suggest that such an interaction does not take place in patients being treated with the antimicrobials most often used in dermatological practice. Antimicrobial therapy for acne has also been complicated by the emergence of antibiotic-resistant strains of P. acnes. Increasing P. acnes resistance can be combated by judicious use of retinoids in combination with antibiotics to reduce inflammation and infection, and employment of retinoids for maintenance therapy.

## The Integral Role of Topical and Oral Retinoids in the Early Treatment of Acne

Shalita A

*J Eur Acad Dermatol Venereol.* 2001;15(suppl 3):43-49

This article will review the rationale for early use of topical retinoids alone or in combination with topical antimicrobials in light of the pathogenesis of microcomedones and later lesions. Knowledge of the pathogenic

processes in acne vulgaris has risen dramatically over the last three decades. It is now widely accepted that acne is the result of four distinct processes: increased proliferation, cornification, and shedding of follicular epithelium; increased sebum production; colonization of the follicle with *Propionibacterium acnes*; and induction of inflammatory responses by bacterial antigens and cell signals. Clinical focus of disease management has shifted toward earlier treatment targeting these fundamental processes. Elimination of microcomedones, the precursor to all subsequent lesions, would optimize acne therapy by preventing the later inflammatory stages of disease. With the exception of oral isotretinoin, no single first-line agent addresses all pathogenic mechanisms. Topical retinoids have comedolytic and in some cases anti-inflammatory effects, but have no direct impact on *P. acnes*. Thus treatment with a combination of topical retinoid and topical antimicrobial is warranted. The former can also enhance penetration of the latter by increasing microcomedonal extrusion. In selecting a combination, one must consider efficacy, cost, and likelihood of compliance. Once thought to be effective primarily for treating comedones, topical retinoids have also been demonstrated to be effective in reducing inflammatory lesions. The activity of a topical retinoid combined with an antimicrobial agent has been shown to clear more lesions and to clear them more rapidly than antimicrobial therapy alone. Topical retinoids are also used effectively to maintain remissions.

### **Acne Vulgaris in Skin of Color**

**Taylor SC, Cook-Bolden F, Rahman Z, Strachan D**  
***J Am Acad Dermatol.* 2002;45(2 suppl):S98-S106**

In the 21st century, individuals with skin of color, including those of Hispanic, Asian, and African American descent, will account for more than half of the US population. Consequently, those individuals will constitute a significant patient population for the dermatology community. Dermatologists in major metropolitan centers as well as those in rural communities need to meet the diagnostic and therapeutic challenges posed by these patients by becoming familiar with dermatologic disease prevalence and presentation in skin of color. Commonly occurring cutaneous diseases, such as acne vulgaris, display histological and clinical differences in people with skin of color compared with Caucasians (whites). Additionally, the response to therapeutic agents may vary in people with skin of color. This article reviews data derived from a survey of skin of color patients with acne vulgaris seen at the Skin of Color Center, Department of Dermatology, St. Luke's-Roosevelt Hospital, in New York City. This information should help clinicians in their diagnosis and treatment of acne vulgaris for these patients.

### **Suicide, Depression, and Isotretinoin: Is There a Causal Link?**

**Jacobs DG, Deutsch NL, Brewer M**  
***J Am Acad Dermatol.* 2001;45:S168-S175**

This paper examines the existing literature and MedWatch reports concerning a proposed relationship between isotretinoin and depression and suicide. The authors provide a brief overview of the biology of isotretinoin and depressive disorder and find no basis for a putative molecular mechanism linking the two. They also address the complexities of Substance-Induced Mood Disorder (SIMD) as a psychiatric diagnosis and its relevance to isotretinoin. Based on this review, the authors conclude that there is no evidence to support a causal connection between isotretinoin and major depression or suicide, because reported cases do not meet the established criteria for causality. The authors also conclude, however, that it is important for dermatologists to be aware of the risk factors for suicide and to monitor patients who exhibit depressive symptoms.