Adolescent "SHORTS"

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Adolescent Update

Denim Day will be April 24, 2008. Denim Day has been internationally commemorated since April 1999 in protest of an Italian High Court ruling that overturned a rape conviction because the victim was wearing jeans. Enraged by the verdict, women of the Italian Legislature protested the decision by wearing jeans. As news of the decision spread, so did the protest. Toolkits for planning local Denim Day events are on the DHSS website http://www.dhss.mo.gov/WomensHealth/DenimDay. If any agency/organization would like to participate in Denim Day, contact 573-526-0445. The Office on Women's Health will provide any agency participating with a supply of Denim Day lapel pins, bookmarks, and flyers for the event.

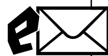
Our guest author for this issue is Teresa S. Wright, M.D., who is a Fellow learning the subspecialty of Pediatric Dermatology. She writes with a great understanding of the impact of acne on teens.

Please continue to give feedback on topics of interest to Dr. Lynch or Patti Van Tuinen.

For further information, please contact:

Daryl A. Lynch, MD
(913) 696•8933
Patti Van Tuinen, M.Ed., C.H.E.S.
(573) 751•6188

E-mail addresses:



Daryl A. Lynch, MD
dlynch@cmh.edu
Patti Van Tuinen
patti.vantuinen@dhss.mo.gov

Daryl A. Lynch, MD is Section Chief of Adolescent Medicine at Children's Mercy Hospital and Consultant in Adolescent Health to MO-DHSS.

Patti Van Tuinen is the Adolescent Health Coordinator for the Missouri Department of Health and Senior Services.

Acne: Pathogenesis, Treatment Options, and Tips for Educating Patients

Teresa S. Wright, M.D. Pediatric Dermatology Fellow Children's Mercy Hospital

Acne vulgaris (commonly called "acne") is an extremely common skin condition. In fact, well over 80% of adolescents suffer from some degree of acne during the teen years.[1] There are many studies documenting the negative effects of acne on mood, self-esteem, and body image among teens.[2] Therefore, healthcare providers who treat adolescents have a significant opportunity to improve the quality of life for teens with acne by providing effective treatment.

What Causes Acne?

Acne is a condition of the pilosebaceous unit (i.e., hair follicle and associated sebaceous gland).[3] There are four main factors involved in the pathogenesis of acne:

1) enlargement of the sebaceous gland and increased sebum production;
2) abnormal desquamation of the follicular epithelial lining, leading to clogged pores;
3) bacterial colonization of the follicle with *Propionebacterium acnes* (P. acnes); and
4) inflammation.

The primary acne lesion is the comedone. Comedones may be closed ("whiteheads") or open ("blackheads"). Non-inflammatory comedonal lesions may become inflamed and lead to the formation of painful inflammatory papules, pustules, nodules and/or cysts.

Choosing a Treatment Plan

In general, health care providers choose a treatment regimen based on several factors, including: the location(s) involved; the type(s) of lesions present (i.e., non-inflammatory and/or inflammatory); the overall severity of the problem (e.g., mild, moderate, or severe). Although a wide variety of topical and oral medications are available for the treatment of acne, most can be grouped into a few basic categories.

Topical Retinoids (e.g., tretinoin, adapalene, tazarotene)

These medications work primarily by improving the abnormal follicular epithelial desquamation and preventing the formation of the comedone.[3] They also have anti-inflammatory effects. Therefore, most acne patients will benefit from the use of a topical retinoid. They should be considered first-line therapy for comedonal acne and mild to moderate inflammatory acne.[3] (Note: tazarotene is pregnancy category X which means it should not be used in pregnant women.)

Topical Antimicrobials (e.g., antibiotics, benzoyl peroxide, and combination products)

These medications work mainly by destruction of *P. acnes* and subsequent inhibition of the local inflammatory response.[3] They are indicated for the treatment of mild to moderate inflammatory acne. In general, topical antibiotics should not be used as monotherapy due to the risk of developing resistant strains of *P. acnes*. For this reason, combination products containing both an antibiotic and benzoyl peroxide are preferred. In addition, most patients with inflammatory lesions will do best if they are using a topical retinoid in addition to a topical antimicrobial product.[4]

Oral Antibiotics

These also work via destruction of *P. acnes* and reduction of inflammation. Oral antibiotics are indicated for more extensive and severe inflammatory acne. Typically, tetracycline and tetracycline derivatives (doxycycline, minocycline) are the first-line choices. Fortunately, severe side effects to these medications are uncommon. Patients should be counseled carefully regarding the potential for photosensitivity and the need for daily photoprotection in addition to any other potentially serious side effects of the antibiotic selected.

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Oral Contraceptives

Oral contraceptive pills (OCP's) may be an additional option for female patients with moderate to severe acne with an inflammatory component. These work via anti-androgen effects that result in decreased sebum production. Theoretically, all combination OCP's reduce free testosterone and may have positive effects on acne. However, the only brands currently FDA-approved for use in the treatment of acne are: Ortho-Tricyclen®, Yaz®, and Estro-Step®.

Oral Retinoids (Isotretinoin)

Indications for treatment with isotretinoin include: severe nodular acne, moderate to severe treatment-resistant acne, and acne causing physical and/or psychological scarring[4]. Although it is safe and highly effective when properly administered to carefully selected candidates who are appropriately monitored, it is also a potent teratogen with other potentially serious side effects. Therefore, its use is tightly controlled via the iPledge regulatory program.

Citations

1. Pawin H et al. Living with Acne. Dermatology 2007; 215:308-314.
2. Bowe WP et al. Body Dysmorphic Disorder Symptoms Among Patients with Acne Vulgaris. J Am Acad Dermatol 2007; 57(2):222-230.
3. Zaenglein AL and Thiboutot DM. Expert Committee Recommendations for Acne Management. Pediatrics 2006; 118(3):1188-1199.
4. Strauss JS et al. Guidelines of Care for Acne Vulgaris Management. J Am Acad Dermatol 2007; 56(4):651-663.

Additional Resources

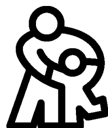
The American Academy of Dermatology website: www.aad.org

The Acne Resource Center Online: www.acne-resource.org

Tips for Patient Education Regarding Acne Skin Care

1. Dispel common acne myths! Acne is not caused by dirt or poor hygiene. For the average patient, acne is probably not significantly influenced by diet.
2. A brief explanation of the four main factors involved acne pathogenesis, as well as how the medications work, may help promote compliance.
3. Basic skin care should consist of gentle cleansing twice daily with a mild cleanser, followed by the application of prescription medication(s) and an oil-free moisturizer (with an SPF=30) as needed. All make-up and hair products should be oil-free or "non-comedogenic".
4. Generally, it is recommended that retinoids be applied at bedtime (mainly to avoid sun exposure immediately after application) and other topical medications be applied in the morning. Only a pea-sized amount of medication is needed to treat the entire face.
5. For topical medications, dryness and irritation are common. Patients should begin new medications slowly (e.g., every other day) and use an oil-free moisturizer as needed.
6. Many topical and oral acne medications increase photosensitivity. Daily application of an oil-free moisturizer containing SPF=30 should be emphasized.
7. Discourage picking! Large pustules may be gently expressed with clean hands. Repeated picking and squeezing will lead to increased inflammation that may result in permanent scarring.
8. Encourage compliance, patience, and communication! Remind patients that no medication will work if they don't use it. Patients will have to use any new medication for at least 6-8 weeks to determine if it is working for them.

Adolescent "SHORTS" is a bimonthly newsletter supported by the Missouri Department of Health and Senior Sevices about adolescent issues for Missouri providers. Any comments or suggestions are welcome and should be directed to either Daryl Lynch, MD or Patti Van Tuinen.



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Section of
Adolescent Medicine
2401 Gillham Road
Kansas City, MO 64108

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Adolescent "SHORTS" is produced to advocate for and promote adolescent health and well being. Information contained in their newsletter is not a substitute for legal, medical or policy advice. Readers are urged to consult their own advisor about specific situations or questions.

Articles in *Adolescent "SHORTS"* refer to boys and girls. For simplicity, the pronouns "he" and "she" are used interchangeably unless otherwise noted.