Part II: Continuation of A Summary Report On Usage Patterns, Management Challenges and Recommendations

By James Q. Del Rosso, D.O., F.A.O.C.D.

The following is Part II of the summary report based on the meeting of The Scientific Panel on Antibiotic Use in Dermatology, held in Las Vegas, NV, on April 22, 2006. The faculty for the program included James Q. Del Rosso, D.O. (Chairman), Dirk Elston, M.D., Jan Hirschmann, M.D., James Leyden, M.D., and Guy Webster, M.D. Part I of the summary report was published in the last issue of Extensions.

Antibiotic Use in Skin and Soft Tissue Infections

- Impetigo, both bullous and non-bullous, is now caused primarily by S. aureus. Topical mupirocin, some oral cephalosporins such as cephalaxin and cefdinir, oral amoxicillin-clavulanate, and some oral macrolide antibiotics are efficacious in treating this condition, although S. aureus resistance to erythromycin is very high in many communities.1,2

- Systemic treatment should be effective against S. aureus. Amoxicillin-clavulanate and oral cephalosporins such as cephalexin and cefdinir have been shown to be more efficacious than amoxicillin and penicillin, respectively.

- Acute flares of atopic dermatitis are effectively treated with topical corticosteroids of appropriate potency based on disease severity. Systemic antibiotics as monotherapy without corticosteroid treatment for atopic dermatitis does not contribute significantly to efficacy of the eczematous dermatitis itself. Antibiotics are indicated when infection is clearly present.

- Chronic suppressive antibiotic therapy, either topical or oral, is not recommended in the management of atopic dermatitis.3

Incision and drainage are vital components of treatment when abscesses are present.5,6

- Incision and drainage are vital components of treatment when abscesses are present.5,6

Acute flares of atopic dermatitis are effectively treated with topical corticosteroids of appropriate potency based on disease severity.

Welcome to the SPRING 2007 Extensions. Our purpose in bringing you this newsletter is to provide you with timely, relevant clinical information to help you provide the best care to your patients.

In the lead section of this issue, beginning on this page, we report on highlights of the newly formed Scientific Panel of Antibiotic Usage in Dermatology (SPAUD), which focuses on usage patterns, management challenges and prescribing recommendations for dermatologic use of antibiotics.

This issue’s Sound Bites gives insight into the new American Acne and Rosacea Society with information on how to join. In addition, Sound Bites highlights pediatric rosacea and discusses whether superficial peels affect sebum secretion.

In the litSCAN column we offer a synopsis of studies that researched topical treatments for hypertrophic scars, whether melanocytic nevi are influenced by pregnancy, and more.

Lastly, we also offer an interesting Case of the Month. Turn to page 6 to try to diagnose this patient’s condition.

You are invited to submit a succinctly written summary of an interesting case accompanied by a digital photograph. Send it to: lhubbs@hmpcommunications.com.

Please forward to us any comments or suggestions you have regarding Extensions. We hope to consistently achieve our objectives of providing a publication that is enjoyable to read, educational and clinically useful.

Professionally yours,
James Q. Del Rosso, D.O., F.A.O.C.D.
Roger I. Ceilley, M.D.
Co-editors
Current Approaches to Antibiotic Selection in Uncomplicated Skin and Soft Tissue Infections

• Uncomplicated skin and soft tissue infections (USSI) are frequently diagnosed clinically and are often not cultured in ambulatory clinic patients.

When cultures are tabulated, gram-positive organisms dominate. Staphylococcus aureus and coagulase-negative species are the majority followed by streptococcal infections. Enterococcus and Pseudomonas aeruginosa are more common in complicated skin and soft tissue infections.

• Erysipelas, a form of cellulitis, has high morbidity. It is characterized by diffuse erythema with a cliff-like border and without subtle gradations of erythema. Relapse rates approach 25%, especially on lower extremities.

Treatments should target patients at high risk for recurrence. Many patients with lower extremity involvement exhibit digital tinea pedis, and many exhibit interdigital tinea pedis. In a study of patients with three episodes within the prior 2 years, I.V. penicillin for four 10-day courses per year (or erythromycin for penicillin-allergic patients), and methods to enhance lymphatic drainage such as pneumatic compression demonstrated one recurrence over a 2-year follow-up.

• Minor skin and soft tissue infections may still be empirically treated with oral antibiotic therapy including beta-lactam drugs (e.g., cephalosporins, semisynthetic penicillins), macrolides, or clindamycin. The most frequently prescribed oral antimicrobials for USSI include:
  ■ oral cephalosporins (>50%)
  ■ amoxicillin/ clavulanic acid
  ■ macrolides
  ■ anti-staphylococcal penicillins
  ■ fluoroquinolones.

Tackling the Anterior Nares and Other Sites of Colonization: Implications for the Dermatologist

• In an evaluation of S. aureus carriage from different body sites in the general population, persistent nasal carriers and perineal carriers produced the highest organism loads, while other sites were less heavily colonized and more likely to be transient. A strong direct correlation was found between colonization rates for the hand and nose in both the general population and in nasal carriers. The anterior nares is the most frequently involved carriage site.

• A nasal MRSA colonization study showed a 10-fold increase in the same community over 3 years, suggesting an overall increase in carriage rates.

• In one study, when non-nasal carriers were artificially inoculated with a mixture of S. aureus strains, they were able to eliminate the inoculated strains and did not become carriers. Persistent carriers selected the original resident strain from the mixture and demonstrated an inherent propensity for carriage.

• A study of U.S. soldiers showed 3% (24/812) were colonized with CAMRSA. Of those, 38% (9/24) developed soft tissue infection over 2 months vs. 3% colonized with methicillin-sensitive S. aureus infection.

• Nasal S. aureus carriage ranges from 39% to 82% in atopic dermatitis. Two studies found that nasal colonization correlated with greater disease severity.

• Nasal carriage of MRSA was shown to correlate with bacteremia and infections of vascular access sites for dialysis and postoperative wound infections.

• In a double-blind, placebo-controlled trial of MRSA carriers (nares=60%; groin=38%, skin=62%) subjects used chlorhexidine skin cleansing and were treated with topical mupirocin or placebo to anterior nares for 5 days. MRSA eradication from all sites was 25% in the mupirocin + chlorhexidine group and 18% in the placebo/ chlorhexidine group. Nasal eradication was 44% and 23% respectively.

Some antibiotics such as tetracyclines have anti-inflammatory activity and may be clinically appropriate in the management of some inflammatory dermatoses.

• An in vitro study comparing povidone iodine, benzalkonium chloride, chlorhexidine gluconate and ethanol showed 70% ethanol to be most effective against MRSA. It eradicated both sensitive and resistant strains in <3 minutes.

• Switching from chlorhexidine gluconate 4% to triclosan 1% reduced new MRSA cases per week from 3.4 to 0.14 (p<0.0001).

Preliminary SPAUD Consensus Statement

Acne and Rosacea

• Antibiotic monotherapy, especially prolonged use, is not recommended in the treatment of acne vulgaris. Prolonged topical or oral antibiotic therapy for acne vulgaris is best accompanied by use of BPO to optimize efficacy and mitigate emergence of less sensitive P. acnes strains.

• Combination use of BPO, a topical and/or oral antibiotic and topical retinoids for acne is rational with the latter being applicable for long-term maintenance treatment once adequate disease control is achieved. If antibiotics are used chronically to sustain long-term maintenance of therapeutic response, concomitant use of BPO is recommended to limit emergence of antibiotic resistance (i.e., Propionibacterium acnes).

• Oral antibiotics have characteristically been used for the past four to five decades for rosacea; however, efficacy of oral agents such as tetracyclines is probably related to anti-inflammatory effects more so than antibiotic activity in this disorder. Anti-inflammatory effects of oral tetracyclines, especially doxycycline and minocycline, are also believed to contribute to the improvement of acne.

• Some antibiotics such as tetracyclines have anti-inflammatory activity and may be clinically appropriate in the management of some inflammatory dermatoses.

• Emergence of less-sensitive P. acnes, commensal organisms, and potentially pathogenic bacteria in patients undergoing chronic antibiotic therapy, especially with an oral agent, warrants...
Fluoroquinolones are not generally recommended as empiric first-line therapy for USSI due to the availability of other effective agents, and the need to preserve their efficacy in the treating infections where oral options are more limited (ie, gram-negative pathogens such as P. aeruginosa).

Many skin and soft tissue infections caused by CAMRSA present as abscesses.

Overall, the most important predictor of effective response to treatment is appropriate incision and drainage, even in cases when the initial empiric oral antibiotic therapy is not active against CAMRSA. If culture and sensitivity confirms CAMRSA after incision and drainage, the need to use an oral antibiotic active against CAMRSA is based on the patient's clinical response.

Topical mupirocin may be used to eradicate both methicillin-sensitive and methicillin-resistant nasal S. aureus carriage; however, therapy should be intermittent. Chronic use may contribute to emergence of mupirocin-resistant S. aureus. Both high-level and low-level mupirocin resistance may be significant with regard to therapeutic effectiveness of the drug.

Prooperative Prophylactic Antibiotic Therapy

Overall, the need for preoperative prophylactic systematic antibiotic therapy in patients undergoing dermatologic surgical procedures (ie, biopsies, excisions) involving non-contaminated or non-infected skin has not been substantially by a strong body of scientific evidence, including both prevention of endocarditis or postoperative wound infection.

Acknowledgement: The SPAUD meeting is sponsored by Physicians Resources and is supported in part through the following educational grantors: CollaGenex Pharmaceuticals, Medicis Pharmaceuticals, and Stiefel Laboratories. The SPAUD faculty gratefully acknowledges the support of these companies in this unprec-dental dermatologic initiative. Submitted for Publication.

References

The American Acne & Rosacea Society (AARS), a new organization dedicated to furthering education and research related to both of these common disorders, recently completed its second educational meeting on February 2, 2007 in Washington, DC.

The society provides an educational newsletter and will soon be kicking off a major public relations campaign to heighten public awareness about these disorders and the importance of appropriate dermatologic care.

The current President of the organization is Hilary Baldwin, M.D., the President-Elect is James Del Rosso, D.O., and the Secretary-Treasurer is Lee Zane, M.D.

Physician assistants and nurse practitioners who are employed by dermatologists are encouraged to join the AARS. For more information, please contact the AARS Executive Director, Cindy Froelich, at cfroehlich@bellsouth.net. The following items are excerpted from the first AARS newsletter issue published in January 2007.

**AMERICAN ACNE & ROSACEA SOCIETY: STIMULATING INTEREST IN TWO COMMON DERMATOLOGIC DISORDERS**

**DO SUPERFICIAL PEELS AFFECT SEBUM SECRETION?**

Superficial chemical peels using agents such as glycolic acid and salicylic acid are often utilized in the treatment of acne vulgaris.

Applications of low concentrations of glycolic acid and alpha-hydroxy acid (AHA) reduce corneocyte adhesion; higher concentrations promote epidermolysis.

Salicylic acid, a component of Jessner’s solution, is a "desmolytic agent", thus producing detachment of corneodesmosomes leading to desquamation of corneocytes. Salicylic acid has been reported to have a stronger comedolytic effect than AHAs.

When asked by a patient, “Will the peels make my face less oily?”, it now appears that the answer is “no” based on a recent study.

- Patients (mean age 25.2 years) with mild to moderate facial acne vulgaris underwent peeling with glycolic acid 30% (n=27) or Jessner’s solution (n=11) on two separate occasions 2 weeks apart.

The objective of the study was to assess the impact of superficial peeling on sebum secretion with each preparation.
- Before and 2 weeks after completion of each peel, sebum levels of the forehead, nose, cheeks and chin were measured using a sebometer. Sebum levels were measured at least 5 hours after facial washing in order to measure the plateau level ("casual level").
- The same blinded investigator performed the measurement of sebum levels in a controlled room environment (temperature and humidity).
- Superficial facial peeling with either glycolic acid 30% or Jessner’s solution did not significantly affect sebum secretion after two repetitive applications separated by 2 weeks.
- The impact of the two types of peels on sebum secretion were not significantly different.


**PEDIATRIC ROSACEA**

Pediatric rosacea is rare. The phymatous form has not been reported in children. However, occasional cases, including one report of rosacea fulminans (pyoderma faciale) appears in the literature.

- The differential diagnosis of pediatric rosacea includes multiple entities, such as acne vulgaris and demodiconis. The latter has been seen in neonates and immunocompromised children with either leukemia or HIV infection.
- Other entities in the differential diagnosis of pediatric rosacea include childhood sarcoidosis, periorificial dermatitis and granulomatous periocular dermatitis. The latter entity has also been referred to as facial Afro-Caribbean childhood eruption, presenting as pink to yellow brown monomorphic papules affecting the perioral, periccular and perinasal regions in prepubertal children.


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**Sound Bites**

Excerpts from scientific journals and highlights of a new society devoted to acne and rosacea research and treatment.

By James Q. Del Rosso, D.O., F.A.O.C.D.

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Topical Treatments for Hypertrophic Scars


- These changes were transient as the nevi recovered their prior appearance after delivery.
- Results also indicate an intrinsic influence of pregnancy that may induce structural modifications without influencing the size of the nevus.
- Progressive lightening of the nevi resulted at the end of pregnancy and after delivery.
- Imiquimod 5% cream has been shown to improve the quality of new hypertrophic scars after surgery in a preliminary clinical trial, but further studies are necessary.
- Silicone ointment or gel alone is less effective than silicone sheeting.
- Vitamin E may be detrimental to wound healing and often leads to contact dermatitis and is therefore not recommended.

Fractional Photothermolysis: Treatment of Facial and Nonfacial Cutaneous Photodamage with a 1,550-nm Erbium-Doped Fiber Laser


- The nonablative 1,550-nm erbium doped fiber laser is an effective treatment for facial and non-facial photodamage, rhytides, and dyspigmentation with a favorable recovery and side effect profile.
- In this study, 51% to 75% improvement in photodamage at the 9-month follow-up was achieved in 73% and 55% of facial and non-facial skin treated, respectively.
- Side effects were limited to transient erythema and edema in the majority of patients. No prolonged pigmented changes or scarring were observed.
- Patient satisfaction surveys mirrored the observed clinical effects.
- The noninvasive nature of fractional photothermolysis treatment, along with an excellent side effect profile, makes this an attractive alternative to ablative laser techniques.

Imiquimod 5% cream has been shown to improve the quality of new hypertrophic scars after surgery.
Case of the Month

Follicular Mucinosis

By Roger I. Ceilley, M.D., and Sandra E. Coady, P.A.-C.

Case Study
A 49-year-old Caucasian female presented with a 3-month history of an enlarging, red lesion that arose suddenly on her left pre-auricular region. She complained that the lesion was very itchy, and treatment with 1% hydrocortisone cream provided no relief.

Examination revealed an erythematous, slightly indurated plaque without ulceration, crusting, or scabbing (Fig. 1). Exam of the head and neck revealed no anterior cervical or jugulodigastric lymph node enlargement. Physical exam was otherwise noncontributory. No new lesions were found when she was examined 1 month later; however, examination 2 months later revealed three more lesions present on her head and neck (Fig. 2).

Diagnosis and Discussion
Two 4-mm punch biopsies were performed. Histology showed that both biopsies were similar with large amounts of primary follicular mucin associated with wide separation of follicular epithelial cells and mucinous microcyst formation.

Perifollicular mononuclear inflammation was seen, and adjacent dermis showed a mix of perivascular and interstitial inflammatory cells in which lymphocytes predominated. A few scattered eosinophils were also seen. Cytologic atypia was not appreciated. The clinical-pathologic correlation led to the diagnosis of follicular mucinosis.

Follicular mucinosis — also known as alopecia mucinosa — was first reported by Pinkus in 1957.1 The eruption consists of papules and indurated plaques that show distinct histologic changes in the hair follicles. These changes can lead to hair loss, which is generally the first outward sign of involvement. This condition also causes mucinous material to accumulate in the hair follicles and sebaceous glands, resulting in an inflammatory and degenerative condition. Occasionally, mucinous material can be expressed out of active lesions.

These plaques and papules are frequently pruritic and may occur as an isolated area or in clusters.2 The face, neck, and scalp are the most frequently affected sites, although these lesions may appear on any part of the body.3 The disorder is more frequent in males. The alopecia is generally reversible unless follicular destruction and scarring have occurred.

There are three subsets of follicular mucinosis.
1. The most common subtype is seen in a younger age group (<40 years), with a tendency for head, neck, and upper arms involvement. Spontaneous resolution generally occurs in 2 months to 2 years.
2. A second subtype occurs in persons >40 years and tends to present with numerous larger lesions that are more widespread, and of a chronic nature.
3. The third subtype is associated with mycosis fungoides (MF), the most common form of cutaneous T-cell lymphoma. This subtype may occur at any age, and lesions tend to be numerous and widespread.

It is estimated that 15% to 30% of patients with follicular mucinosis will have associated MF, which may be diagnosed histologically by the presence of atypical lymphocytes. The dermatopathologist should carefully analyze any specimen with follicular mucinosis for features of MF, and if found, the patient must undergo further evaluation.

Histopathology
Follicular mucinosis, also known as alopecia mucinosa is a disease process defined histopathologically by mucin deposition in hair follicles and sebaceous glands which then undergo degeneration. The pathogenesis of FM is unknown.1

Treatment
No histologic findings of MF were seen in the biopsy from our patient, so this case most likely represents the second subtype of follicular mucinosis.

Our patient was treated with multiple intralesional triamcinolone 2.5 mg/cc injections. Other forms of therapy are being considered.

There is no definitive treatment for follicular mucinosis. Most cases will resolve on their own within 2 to 24 months of initial presentation, though other subtypes are more recalcitrant. Treatments for follicular mucinosa include topical, intralesional and systemic corticosteroids as well as PUVA, radiation therapy, isotretinoin, dapson, and minocycline.3

Pediatric and primary chronic follicular mucinosis generally disappear within 2 years, while secondary follicular mucinosis (especially when it appears with mycosis fungoides) persists and has the least favorable prognosis.2

References
Brief Summary

Duac® Topical Gel (clindamycin, 1% - benzoyl peroxide, 5%)

Not for oral or intranasal use. Read carefully.

INDICATIONS AND USAGE

Duac Topical Gel is indicated for the topical treatment of inflammatory acne vulgaris. It is also recommended in those having a history of oropharyngeal, ulcers, or skin ulcers, or oral or ophthalmic-associated ulcers.

WARNINGS

Ocular and Parenterally Administered Clindamycin has been associated with the development of pseudomembranous colitis when used for the treatment of non-inflammatory acne. Duac Topical Gel has not been demonstrated to have any additional benefit when compared to benzoyl peroxide alone in the same vehicle or higher vehicle concentration.

CONTRAINDICATIONS

Duac Topical Gel is contraindicated in those individuals who have shown hypersensitivity to any of its components or to lincomycin. It is contraindicated in those with a history of inflammatory bowel disease, including ulcerative colitis, pseudomembranous colitis, or antibiotic-associated colitis.

PRECAUTIONS

Clindamycin phosphate does not penetrate the skin. Benzoyl peroxide is a strong oxidizer and may cause irritation or photosensitivity. Avoid contact with eyes and mucous membranes.

Local Reactions with use of Duac Topical Gel

Local reactions with the use of Duac Topical Gel ranged from mild to severe. The percentage of patients that had local reactions were:

- 0%: Absent
- 1%: Mild
- 2%: Moderate
- 3%: Severe

The local reactions included:

- 15%: Peeling, desquamating, or abrasive agents.
- 1%: Severe persistent diarrhea and severe abdominal cramps and should be considered to establish a definitive diagnosis. In cases of severe diarrhea, antibiotic resistance should be considered to establish a definitive diagnosis in cases of severe diarrhea. Antibiotics of the following scale: 0 = absent, 1 = mild

Mild, 2 = moderate, and 3 = severe. The percentage of patients that had local reactions were:

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REFERENCES:


Duac is a registered trademark of Stiefel Laboratories, Inc. Your Choice is Clear and Make the Clear Choice are trademarks of Stiefel Laboratories, Inc.
IMPORTANT SAFETY INFORMATION

Duac Topical Gel is indicated for the topical treatment of inflammatory acne.

Duac Topical Gel is well tolerated. Side effects may include erythema, peeling, burning, and dryness.

Duac Topical Gel is contraindicated in patients who have shown hypersensitivity to any of its components or clindamycin, and in those with a history of regional enteritis, ulcerative colitis, or antibiotic-associated colitis. Diarrhea, bloody diarrhea, and colitis have been reported with the use of topical clindamycin. Discontinuation is recommended if significant diarrhea develops.

Please see accompanying Brief Summary of Prescribing Information.