A study that aimed to compare two substances to debride diabetic foot ulcers discovered that clostridial collagenase ointment actually reduces wound inflammation and facilitates healing.

"What we found was that this collagenase actually helps reduce the inflammation as a secondary feature. As a result, you can actually use this enzymatic debrider right until the wounds heal," said Richard C. Galperin, DPM.

Dr. Galperin, who is in private practice in Dallas, discussed the surprising discovery yesterday during his plenary presentation, "The Anti-Inflammatory Properties of Collagenase on Wounds."

The discovery was made during a study on treating wounds, released as a poster presentation, "Anti-Inflammatory Effect of Clostridial Collagenase Ointment in Diabetic Foot Ulcers: Analysis of Wound Exudate."

The single-center study randomized 17 subjects into one of two groups whose diabetic foot ulcers were treated for four weeks with clostridial collagenase ointment or a hydrogel.

Richard C. Galperin, DPM: "I think it opens up a whole new way of approaching how you look at wounds."

"The study consisted of an analysis of the wound fluid of chronic diabetic foot ulcers," Dr. Galperin said. "We found they were highly proteolytic and pro-inflammatory, and these factors are what leads to prolongation of the inflammatory phase. This is why they are called 'stalled wounds.'"

A secondary objective of the study was to explore the relationship between wound inflammation and the healing progress in diabetic foot ulcers based on the measurement of 22 different wound fluid analytes associated with inflammation or resolution of inflammation, before, during, and after.

"The study was designed to take a look at wounds,'" Dr. Galperin said.

Podiatric Medicine on the Path to Parity

APMA President Frank Spinosa, DPM, welcomed attendees to yesterday’s Opening Session with a discussion of APMA’s strategic direction and the profession’s progress along the Path to Parity.

Dr. Spinosa told hundreds of podiatric physicians, sponsors, exhibitors, staff, and guests that "Vision 2015 set lofty goals for the profession, and together, we have made huge advances in accomplishing those goals." He detailed successes, including a standardized, three-year residency curriculum; strong relationships with other medical professional organizations; and legislative and policy victories.

While Vision 2015 is a time-limited campaign, the Path to Parity, Dr. Spinosa said, is a long-term strategy. "APMA is committed to its Path to Parity—in 2015 and beyond," he said.

Dr. Spinosa asked members to make a personal commitment to advancing the podiatric medical profession’s progress along the Path to Parity. He advised members to be active in their local health-care communities; make use of APMA’s new eAdvocacy system; visit APMA booth #623 to test-drive the site; and help APMA to educate the public and our legislators about podiatrists’ education, training, and experience.

"With you, our members, leaders, and partners, APMA will continue to lead the way on the Path to Parity, and we will reach our goal," Dr. Spinosa promised.
Visit the APMA booth (#623) today to make your donation to APMAPAC and take a tour of APMA’s new eAdvocacy Federal and State Action Center.

Can’t make it to the exhibit hall?
Visit www.apma.org/donate any time and make a difference for podiatry. Become a TEAM APMAPAC member today!

PURPOSE: The American Podiatric Medical Association Political Action Committee’s purpose is to raise and disburse funds to candidates for federal office who support the legislative priorities and goals of the podiatric medical profession.

IMPORTANT: You may contribute or not contribute without concern of being favored or disadvantaged. Occupation/ Employer information is required for aggregate annual contributions of more than $200.00 by the Federal Election Campaign Act. Federal election law does not permit corporate contributions to be used for donation to candidates for federal office. Political contributions are not deductible for income tax purposes.
New Treatments Available for Onychomycosis

If we are trying to advise patients on things that work or don’t work, we can tell them what square one is for nonprescription products.

Jeremy Cook, DPM, MPH

director of research at Mount Auburn Hospital, Cambridge, MA. “This is consumer protection for patients, but it also helps providers understand what patients may be buying.”

Five oral antifungals are available—terbinafine, itraconazole pulse, itraconazole continuous, fluconazole, and griseofulvin. Studies of the products show that terbinafine has the best cure rate, at 76 percent, followed by itraconazole pulse, 63 percent; griseofulvin, 60 percent; itraconazole continuous, 59 percent; and fluconazole, 48 percent.

Eight topical antifungals have cure rates ranging from 90 percent to 27 percent in studies around the world. Cure rates were: sunflower oozonized oil (Oleozon), 90.5 percent; miconazole nitrate (Fungoid Tincture), 90 percent; 2% butyrafine hydrochloride (Lotrimin Ultra) and tea tree oil (5% Melaleuca Alternifolia Oil in cream), 80 percent; 16.85 Ageratina pichinchensis extract, 79.1 percent; debridement and ciclopirox 8% nail lacquer, 76.7 percent; amorolfine 5% nail lacquer twice a week, 54.2 percent; ciclopirox 8% nail lacquer, 34 percent; propylene glycol, urea and lactic acid (K101), 27.2 percent.

Three studies of laser therapy show an 85 percent cure rate for 870- and 930-nm light exposure on days 1, 14, 42, and 120 at six months, but a 38 percent cure rate for 870- and 930-nm light exposure on days 1, 14, 42, and 120 at nine months and with a more strict definition of the cure rate. A 1064 nm light exposure on days 0, 7, 14, and 21 for two courses (eight sessions) had a cure rate of 51 percent over six months. A meta-analysis of the treatment of tinea pedis found that allylamines performed better than azoles but are generally more expensive, but azoles should be used as first-line therapy.

Tavaborole was approved by the FDA June 9; efinaconazole 10% solution had almost a complete cure at week 52. In the study, it was applied daily at bedtime for 48 weeks and was applied to the clean, dry nail plate surface, lateral and proximal nail folds, hyponychium, and undersurface of the nail plate. Tavaborole was approved by the FDA July 8; tavaborole 5% is the first oxaborole antifungal approved in the US for the treatment of onychomycosis. It met its primary endpoint of complete cure of the target great toe at week 52 and its secondary endpoint of a negative mycology of the target great toe.

SCHEDULE

Continued from page 1

Development for the Podiatric Medical Assistant
Room STAB
2-2:30 p.m.
CECI Scanning
Kamehameha Exhibit Hall
2:30-5:30 p.m.
Young Physicians’ Program: Insuring Success: Practice Survival (non-CECH)
Hilton Hawaiian Village South Pacific 1
Hands-On Ultrasound Workshop
Hilton Hawaiian Village South Pacific 2-3

Question of the Day

What do you consider the most interesting research papers presented during the APMA Oral Abstracts Session?

Gilbert D. Shapiro, DPM, Tucson, AZ

“The therapeutic shoe evaluations were of interest because we deal with that all of the time. I think they were just important studies.”

Bob Lagone, DPM, Muscatine, IA

“The SPECT/CT scan paper was interesting. He had some nice information to present. I am interested in post-osteomyelitis follow-up—being able to track that. I had a call from an internist just last week on that, so it was interesting.”

David G. Edwards, DPM, Logan, UT

“I liked seeing the plantar plate ultrasound results because I have done some repairs on that. I have an interest in the plantar plate, and I have been doing some research in that direction.”

A.J. Donley Jr., DPM, Lansdale, PA

“The shoe evaluation by Dr. Dux was interesting. I used to be a marathon runner and treated a lot of marathon runners. I don’t necessarily agree with her conclusions, but I respect that she did the research.”

ENZYMATIC DEBRIDER

Continued from page 1

at the end of treatment, he said.

“With the enzymatic debrider, there was a reduction in the inflammatory status of the ulcers, which was being measured by the anaystes, as compared to the hydrogel, which simply keeps the wounds moist,” Dr. Galperin said.

“The main take-home point from the study was the correlation of molecules associated with inflammation in the wound fluid with stalled healing and the positive impact that clostridial collagenase treatment had in reducing these,” he said. “This tells us that there is something different about enzymatic debrider compared with further study of the fluid in wounds, Dr. Galperin said.

“If we are trying to advise patients on things that work or don’t work, we can tell them what square one is for nonprescription products,” said Dr. Cook, instructor in surgery at Harvard Medical School and

Continued from page 1

“I think it opens up a whole new way of approaching how you look at wounds,” he said. “In addition to clinical evaluation and documenting size and depth, now, you can look at them on the cellular level and say, ‘Let’s see the consistency of it. What is it unique. It actually works at the molecular level. There is something in the action of the ointment that fosters a wound environment conducive to healing.’”

The next step is to expand the findings with further study of the fluid in wounds, Dr. Galperin said.

“The main take-home point from the study was the correlation of molecules associated with inflammation in the wound fluid with stalled healing and the positive impact that clostridial collagenase treatment had in reducing these,” he said. “This tells us that there is something different about enzymatic debrider compared with further study of the fluid in wounds, Dr. Galperin said.

“For the future, we are going to do some research to see the consistency of it. What is it unique. It actually works at the molecular level. There is something in the action of the ointment that fosters a wound environment conducive to healing.”

Continued from page 1

Friday, July 25, 2014

The National Today • APMA Annual Scientific Meeting
Surgery Track Examines Outcomes, New Approaches

Fixation Techniques, Open Fractures, Oral Antibiotics Discussed

Dr. Klein reviewed the concept of validated patient-reported outcome measures (PROMs), which are surveys completed by patients. ‘They are developed to measure the patients’ perceptions of their symptoms, functional abilities, and quality of life. The Foot and Ankle Outcome Score (FAOS) is a popular, scientifically validated survey with five subscales to measure pain, symptoms, activities of daily living, sports and recreation, and quality of life. This has been validated for patients undergoing surgical correction of both hallucus valgus and hallux rigidus. ‘You can use a survey that is not validated, but there is less scientific validity to using it,’ Dr. Klein said. ‘This is something that may be able to change as foot and ankle surgeons.’

External Fixation Basics, Techniques, Uses

Podiatric surgeons learned the basics of building external fixation devices for foot and ankle applications in ‘External Fixation Basics, Techniques, Uses,’ a workshop presented Thursday. ‘We looked at basic constructs—what to use, how to use it, and how to build an external fixator a surgeon can use for the majority of foot and ankle procedures,’ said Patrick R. Burns, DPM, assistant professor of orthopedic surgery at The Ohio State University. ‘We provided instructions on how to build a basic fixator and how you would use it. ‘Then, we had a ‘hands-on’ session so you not only saw case presentations and examples, but learned how to build it yourself and put it on a sawbones (workshop model). Attendees learned important fundamentals of what makes a good construct.’

Current Concepts of Open Fracture Treatment

The time to surgery and the use of antibiotics in the treatment of open fractures has changed in recent years, and the development of a new injury classification system has been discussed, but many treatment basics remain the same. ‘Even with all of these changes, each case should be treated individually. We may have new recommended guidelines, but each patient needs to be treated on an individual basis. Not every open fracture is the same,’ said Keith Cook, DPM, who presented ‘Current Concepts of Open Fracture Treatment.’

The Gustilo-Anderson system has been used to classify open fractures since the mid-1970s, but it was designed for long-bone fractures and does not work as well for foot and ankle fractures, said Dr. Cook, director of podiatric medical education and assistant director of the Podiatry Department at University Hospital, Newark, NJ. ‘There is a push in the orthopedic community to develop a new classification system,’ he said, adding that a system with five categories was proposed in a 2010 paper. ‘Still, there are no recommendations and no outcome measures. They need to test this proposed classification system to establish its validity and determine its clinical use.’

New approaches have been adopted in treatment immediately after injury. The ‘golden period’ for surgery still is six hours to eight hours after injury, but waiting 24–48 hours may not affect outcomes, Dr. Cook said. ‘Recent literature has shown that it doesn’t really have an effect if you get these patients to the operating room in the first six hours,’ he said. ‘The infection rates have not changed.’

The key in controlling infection is cleaning, irrigating, and debriding the wound, which can be started in the emergency room. The use of antibiotics also has changed. Studies show that the severity of the injury has a greater impact than the duration of antibiotics, and a broad spectrum of antibiotics is now favored over 72 hours of IV treatment with cephalosporins and aminoglycosides, Dr. Cook said. ‘With the most severe injuries you have a greater risk of infection regardless of the duration of the antibiotic,’ he said.

Still another change is that internal fixation, such as plates, screws, and K-wires, can be used if there is sufficient soft-tissue coverage, but external fixation or minimal internal fixation are still common, Dr. Cook said.

Complications With Internal Fixation

Advances in open reduction and internal fixation give podiatric surgeons more treatment options, but they need to consider several factors before acting. ‘Complications with Internal Fixation’ used a variety of case studies to explore when to use which options. ‘The idea is to use the appropriate internal fixation for the procedure one is performing. It is taking into account the patient’s age, physical condition, comorbidities, and bone density, and whether they smoke or have diabetes,’ said session presenter Alan J. Block, DPM, MS. ‘One needs to put the whole picture together for the best outcomes. We are trying to show where and how the complications happen, and learn from the complications.’

The complications start with less attention on the procedure and more on the use of a new generation of plates and screws, and concern for earlier return to ambulation, said Dr. Block, assistant professor in the Department of Orthopedics at The Ohio State University. ‘We’ve been able to do procedures we could not do years ago. We have at our disposal incredible devices for repairing the foot and ankle, and a lot of the complications come because patients are living longer and there are a lot of comorbidities,’ he said. ‘We are seeing older, weaker patients, and we are doing more on them.’

To deal with the aging population’s fragile bones, more sophisticated and expensive devices, such as locking plates, are frequently used.
“We’ve invented plates and screws that allow us to have bigger bites from the bone and more stabilization,” Dr. Block said. “If the bone can’t stabilize the screw by itself, the locking plate gives integrity by supporting the bone better. We have gotten more complicated with screws and plates, but we don’t always need to do that.”

Dr. Block used a series of case studies and X-rays to demonstrate where treatment failed, and he discussed when new materials should be used or not used.

“The idea is to help everyone think through the case. You have to think biomechanically when you are addressing the foot and the ankle,” he said.

**Update on Osteomyelitis**

The long-standing “standard of care” for osteomyelitis that calls for four to six weeks of intravenous antibiotics following aggressive debridement has no evidence supporting its effectiveness. A better alternative may be to use oral antibiotics, said Warren S. Joseph, DPM, in his presentation, “Update on Osteomyelitis.”

“This has been one of these recommendations that has been passed along for generations,” said Dr. Joseph, consultant in lower extremity infectious diseases at Roxborough Memorial Hospital, Philadelphia, and editor of the Journal of the American Podiatric Medical Association. “There is limited evidence to suggest that surgical debridement is really necessary, and there is very good evidence to suggest that oral antibiotics are as effective as intravenous antibiotics.”

A 2012 review by Spellberg and Lipsky on the treatment of osteomyelitis recommends therapy with highly bioavailable agents, and adding rifampin to a variety of antibiotic regimens improves cure rates, he said. In addition, the duration of therapy should be based on a patient’s clinical and radiographic response.

Surgical resection appears to increase cure rates, but not all cases of chronic osteomyelitis require it, Dr. Joseph said.

“If you have osteomyelitis of the hallux and can surgically remove all of the bone of the great toe, then you have cured the osteomyelitis,” he said. “But there are patients who are not candidates for surgery. Maybe they don’t want surgery or they may be medically unstable, and that is where antibiotics alone have been shown to be as effective as surgery.”

The key factor in nonsurgical treatment is selecting an antibiotic using a bone culture to identify the organism in the bone, Dr. Joseph said.

“I also question this misconception about bone penetration being so important,” he said. “Everybody thinks antibiotics need to have good bone penetration, but no one has standardized the technique to determine what bone penetration is, so how do you know what has good bone penetration?”

“Six weeks of antibiotics is still widely thought of as the standard of care. It’s not that they are wrong, it’s just that they are not up to date. It is still very commonly used, but we are starting to see a shift as more evidence comes out.”

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**HONOLULU CONGRATULATES APMA**

Honolulu City Councilmember Stanley Chang was on hand at The National yesterday to deliver a certificate congratulating APMA on the occasion of its Annual Scientific Meeting. The certificate recognizes the contributions of the association and its members to public health and patients’ quality of life. Councilmember Chang is a Democratic candidate for the US House of Representatives.

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**REdRC is an online repository of educational materials to supplement residents’ daily hands-on experience and is free for APMA members. Visit REdRC.org to learn more and opt-in today.**

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- **Growth**—By July 2015, REdRC will feature 150 lectures. Additionally, plans are in place to expand the resources available for residents to include monthly webinars, procedure- or device-specific supplemental training videos, and a résumé builder section for third-year residents.

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**Founding Sponsors**

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**Scanning Schedule**

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
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<tr>
<td>Today 9–9:30 a.m.</td>
<td>Scanning in the exhibit hall 2.5 contact hours</td>
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<tr>
<td>Noon 1 p.m.</td>
<td>Noon-1 p.m. Scanning in the exhibit hall 2.5 contact hours</td>
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<td>Noon-2 p.m.</td>
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<td>Noon-1 p.m.</td>
<td>Noon-1 p.m. Scanning in the exhibit hall 2.5 contact hours</td>
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<tr>
<td>1–2 p.m.</td>
<td>1–2 p.m. Poster Abstracts Symposium Scanning in poster exhibit 1 contact hour</td>
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<tr>
<td>2–4 p.m.</td>
<td>2–4 p.m. Risk Management Seminar Ballroom Scanning immediately following the conclusion of the seminar 2 contact hours</td>
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<td>Saturday 9–9:30 a.m.</td>
<td>Saturday 9–9:30 a.m. Scanning in the exhibit hall 2.5 contact hours</td>
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<tr>
<td>10:30–11 a.m.</td>
<td>10:30–11 a.m. Scanning outside lecture hall Hilton Hawaiian Village, Coral 4 3 contact hours</td>
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<tr>
<td>Noon–1 p.m.</td>
<td>Noon–1 p.m. Scanning outside lecture hall Hilton Hawaiian Village, Coral 4 1.5 contact hours</td>
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**Saturday Scanning Schedule**

- **9–9:30 a.m.** Scanning in the exhibit hall
- **2–2:30 p.m.** Scanning in the exhibit hall
- **1–2 p.m.** Risk Management Seminar Ballroom
- **2–4 p.m.** Risk Management Seminar
- **9–9:30 a.m.** Scanning in the exhibit hall

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**Sunday Scanning Schedule**

- **12:30–1 p.m.** Scanning outside lecture hall Hilton Hawaiian Village, Coral 4 1.5 contact hours
- **10:30–11 a.m.** Scanning outside lecture hall Hilton Hawaiian Village, Coral 4 3 contact hours
- **2–2:30 p.m.** Scanning in the exhibit hall
- **10:30–11 a.m.** Scanning outside lecture hall Hilton Hawaiian Village, Coral 4 3 contact hours
- **2–4 p.m.** Risk Management Seminar Ballroom
- **9–9:30 a.m.** Scanning in the exhibit hall

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**Scanning Schedule**

Friday, July 25, 2014

**The National Today • APMA Annual Scientific Meeting**

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**REdRC Residency Education Resource Center**
New Treatments Developed for Several Dermatology Issues

Evidence-based treatment of warts, a look at new approaches for treating common skin conditions, and advances in diagnosing and treating onychomycosis were discussed yesterday during Track 3, Dermatology.

Evidence-Based Treatment of Warts

In the world of evidence-based medicine, the treatment of warts remains a challenge because of the lack of treatment guidelines and reimbursement that is increasingly based on outcomes. Both issues were addressed during “Evidence-Based Treatment of Verruca.”

“Under the Affordable Care Act, you have to follow evidence-based guidelines or you won’t be reimbursed. That is the relationship in today’s health-care environment, particularly with value-based care,” said Jacqueline B. Truong, DPM, MPH, department chair and assistant professor for the Department of Medicine, Surgery and Biomechanics at the Western University of Health Sciences College of Podiatric Medicine, Los Angeles.

Evidence-based medicine is a combination of the patient’s knowledge, rights, and preferences combined with the physician’s proficiency, judgment, clinical skills, and years of experience, as well as the use of the best external evidence from medical literature, she said.

Another factor is value-based care, which can be seen as a ratio: the patient’s health outcomes—the quality, outcomes, and patient satisfaction—as the numerator over the denominator—the amount of money spent in the full cycle of care for the patient.

“How do we improve a patient’s outcomes? Evidence-based medicine fits nicely into that in that you are able to use your expertise and the patient’s preferences and particular situation. You take all of that into consideration and build the best treatment plan to increase the numerator and decrease the denominator,” Dr. Truong said.

But a unique factor in this equation is that no evidence-based guidelines for the treatment of verruca have been developed. When treatments are studied, it is unknown if a favorable outcome is a result of the treatment or spontaneous resolution.

“The natural history for warts is such that some people have spontaneous resolution. It depends on how long they have had the human papillomavirus infection before they reach the spontaneous resolution,” Dr. Truong said. “Most literature cites an average of two years; two-thirds of patients will self-resolve. You don’t know if your treatment is actually effective or if it was just the natural history of that virus.”

Dr. Truong concluded her presentation by reviewing treatment algorithms that looked at low-, intermediate-, and high-risk stratifications and treatment action plans for verruca.

Lower Extremity Dermatology Cases

Podiatric physicians understandably focus on diagnosing and treating a variety of structural issues in the foot and ankle, but they also need to look at the bigger picture and be aware of patient dermatology issues.

“Frequently I have doctors say they think they don’t have a dermatology practice, but they do see dermatology conditions. A lot of things will walk into their offices,” said G. (Dock) Dockery, DPM, who presented “Lower Extremity Dermatology Cases.” “Patients may come in with heel pain, but have a rash somewhere, so doctors need to be more aware, look at the whole foot, and examine the patient, and not just jump on the primary complaint.”

Dr. Dockery, International Foot & Ankle Foundation, presented a series of cases during the presentation to demonstrate common skin conditions and update physicians about diagnosis and treatment. The cases compared pediatric and adult versions of eczemas; other conditions that are similar to eczemas, such as tinea pedis; and lesions that can look like warts, and basal cell and squamous cell carcinomas.

“Don’t guess instead of making a diagnosis.”
Today’s Program Highlights

Dermatology, Imaging, Sports Injuries, Pain Management Among Topics of Interest

Today’s education sessions will highlight presenters discussing important podiatric topics. Subjects addressed in sessions will include an update on treating dermatology issues, when to use different imaging modalities, diagnosing and treating sports injuries, factors to consider in pain management, the importance of professional ethics, and new approaches in treating vascular disease. Other interesting sessions include a hands-on ultrasound workshop and a program with several topics of interest for young physicians.

6:30-8 a.m. in Ballroom A, Breakfast Symposium, Dermatological Condition Update

“Review of Topical Treatments for Lower Extremity Dermatological Conditions,” G. (Dock) Dockery, DPM, will explain that most rashes on the foot are not fungal infections.

“The Physiology of Dermatological Conditions in Diabetes,” Fariba Rahnema, MD, will look at advances in treating patients with diabetes and the role of podiatric physicians in controlling ulcers on the feet.

8-9 a.m. in Ballroom B, Plenary Lecture, Interesting Case Studies in Podiatric Medicine

Bradley Bakotic, DPM, DO, will offer a look at fascinating cases.

9:30 a.m.-Noon in Room 311, Track 1, Radiology

“MRI of the Ankle and Foot,” Benjamin D. Levine, MD, will explain the benefits of MRI in diagnosing ankle and foot problems.

“Ankle Injuries: Update on Imaging,” Dr. Levine will discuss when to use specific imaging modalities.

“Foot and Ankle Ultrasound,” Nathan H. Schwartz, DPM, will explain the benefits of ultrasound imaging.

“Advantages of CT,” Albert V. Armstrong Jr., DPM, MS, will review when to use computed tomography (CT).

“Advances in 3D Weight-Bearing CT,” see HIGHLIGHTS, page 8

Exhibiting Humor

Humorist Greg Schwem (center) moved from the stage for his Opening Session address to The National exhibit hall, where he met with attendees shortly after the hall opened yesterday. Schwem provided laughs on stage and in the hall with his take on the current state of health care, and posed for photos with fans. The exhibit hall opens at 9 a.m. today and tomorrow.
APMA members are eligible to receive discounts on footwear, insoles, and hosiery through APMA's Professional Purchase Programs and Discounts!

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Data relevant to common foot injuries that may help in orthotics prescriptions and new technologies in orthotic design.

- “Achilles Tendon Injuries in Sports,” Dr. Werd will discuss the role of minimalist shoes and stretching in Achilles tendon injuries.

9:30-10:30 a.m. in Room 312, Track 2, Biomechanics

- “The APMA-Funded Plantar Fasciitis Study,” James S. Wrobel, DPM, MS, and Adam E. Fleischer, DPM, MPH, will review the benefits of custom orthotics, stretching, and ice massage.
- “The Hawaii Ironman Experience: A Finisher’s Perspective and Endurance Medical Issues,” Matthew B. Werd, DPM, will discuss treating the injuries of triathlon competitors.
- “Innovations in Orthotics,” Howard E. Kashefsky, DPM, will discuss the newest technologies relevant to common foot injuries that may help in orthotics prescriptions and new technologies in orthotic design.

11:30 a.m.-12:30 p.m. in Room 301B, Track 3, Pain Management

- “Defensible, Rational, and Compassionate Pain Management,” Howard A. Heit, MD, an expert in pain both professionally and personally, will discuss the background needed to practice good pain management.
- “Time Is Tissue: The Urgency of Revascularization in the Ischemic Diabetic Foot,” David A. Pougatsch, DPM, will explain the use of minimal access to revascularize limbs.
- “Transpedal Endovascular Interventions for Critical Limb Ischemia,” Rabih Chaer, MD, will explain the use of pedal access for minimally invasive procedures to revascularize limbs.

1-2 p.m. in Room 312, Track 2, Applying the APMA Code of Ethics to Practice

- “Health-Care Law,” J. Kevin West, JD, will discuss several medical legal topics, such as employment and insurance contracts, malpractice insurance, HIPAA, and fraud and abuse laws.
- “Career Opportunities,” Jon R. Goldsmith, DPM, will explain career opportunities for young physicians.
- “Disaster Planning,” William H. Dabdoub, DPM, will share lessons he learned when his practice in New Orleans was destroyed by Hurricane Katrina.
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The APMA Coding Resource Center has been made possible through an educational grant from Merz Pharmaceuticals LLC. A portion of the proceeds will benefit the APMA Educational Foundation Student Scholarship Fund.
Use of Ultrasound, Role of Footwear, Osteomyelitis Diagnosis, Effectiveness of Transmetatarsal Amputations Discussed

The latest research on the use of ultrasound for detection of plantar plate pathology, the role of therapeutic footwear in reducing complications from diabetes, the importance of shoe fit in reducing injuries among runners, and the use of CT imaging and MRI for diagnosing osteomyelitis was presented during yesterday’s Oral Abstracts session.

Emily A. Cook, DPM, MPH, opened the session with “Introduction to Evidence-Based Medicine,” in which she discussed how to evaluate research. She discussed the difference between causation and association, how to understand the key aspects of a study, and how to interpret p-values.

“When you see something that is statistically significant, it does not mean that it is clinically significant. A randomized control trial that is poorly designed can be quite dangerous because people may interpret it as truth, when really it might not be. Observational studies can also be very valuable, as long as you know how to properly interpret and apply them. In other words, it is important that you understand how to critically analyze the literature so you can develop your own conclusions when deciding whether to modify the way you treat a patient based off of a publication,” said Dr. Cook, a clinical instructor in surgery at Harvard Medical School and director of resident training at Mount Auburn Hospital, Cambridge, MA.

Using Ultrasound to Diagnose a Plantar Plate Tear

Ultrasound can be a cost-efficient option to help clinicians and surgeons diagnose a tear in the plantar plate, according to study results presented in “Static and Dynamic Musculoskeletal Ultrasound for Detection of Plantar Plate Pathology.” The study by Catherine A. Feuerstein, DPM, developed two ultrasound images on 45 joints in 36 patients who were diagnosed with plantar plate tears at Weil Foot and Ankle Institute, Chicago. Each patient with a plantar plate tear at the second metatarsophalangeal (MTP) joint received static and a dynamic ultrasound. In the static ultrasound, there was no movement of the second toe at the MTP joint, while in the dynamic ultrasound the second toe was plantar and dorsally displaced at the MTP joint, Dr. Feuerstein said.

“I compared the ultrasound findings to the intraoperative findings of a plantar plate tear,” said Dr. Feuerstein, an associate at South Chicago Foot and Ankle, Lincoln Park Foot and Ankle, and a faculty member at the Dr. William M. Scholl School of Podiatric Medicine, at Rosalind Franklin University of Medicine and Science, North Chicago, IL. “We found that static and dynamic ultrasound techniques are highly sensitive methods for assessing plantar plate pathology. However, the sensitivity and accuracy of the exam is best when dynamic assessment of the plantar plate is employed.

“When we combine what we already know about MRI—a test that is both highly accurate and specific—with ultrasound, it would appear that these modalities are actually quite complementary. In other words, a negative dynamic ultrasound exam should be most beneficial in ruling plantar plate pathology out, while a positive MRI would be most helpful in ruling plantar plate pathology in.”

Orthopedic Shoes Help Reduce Diabetes Complications

Wearing orthopedic shoes helped reduce ulcerations and amputations among people with type 2 diabetes, according to a retrospective study, “Therapeutic Footwear Reduces Complications in Diabetes: A Two-Year Retrospective Longitudinal Cohort Study of 32,975 Subjects.” The study also looked at the participants’ comorbid conditions—cardiovascular problems, hypertension, kidney disease, and depression—and selected diabetes complications—calluses, neuropathy, and atherosclerosis. However, the results for these conditions did not improve, said Roy H. Lidke, DPM, assistant professor of internal medicine, Rush University Medical Center, Chicago.

Amputations decreased 29 percent in the first year of the study and 18 percent in the second year. Ulcerations fell 2 percent in the first year of the study and 12 percent in the second year.

“We were hoping that when patients got good shoes that they would walk more and exercise, and then we would see changes in cardiovascular and other conditions,” Dr. Lidke said. “What we found was that these people were pretty sick to begin with. Most of the conditions kept getting worse. Although there were more claims and more complications, the foot ulcerations and amputations decreased. These were the only two variables related to diabetes that improved over time.”

The study, based on three years of Medicare and private insurance claims data from the Truven Health Analytics MarketScan Database, also looked at the effect on patients who received custom inserts with their shoes.

“The custom-insert data were slightly better, but not statistically significant,” Dr. Lidke said. “The problem with the control data set is that those who got custom inserts were probably more sick.”

Shoe Fit Trumps Matching Shoe to Foot Arch

Shoe fit by size is more important than matching the shoe to the arch of the foot in reducing injuries among runners, according to a study presented yesterday. This finding goes against the industry standard for recommending shoes to runners.

“In our study, we identified that there was no increased risk for injury when patients wore shoes that were not appropriate for their plantar foot shape or foot structure. However, we did find that these athletes were at a fourfold increased risk for injury when their shoes were ill-fitted from the longest toe back to the heel,” said Katherine E. Dux, DPM. “The reason this is important is because industry standards recommend shoe fit based on plantar foot shape to the type of shoe.”

The study, “Shoe Fit in Marathon Runners: Is There a Correlation Between Fit and Injury?” included 174 participants at the 2012 Bank of America Chicago Marathon, where 110 runners were placed in a subject group and 64 were placed in a control group, said Dr. Dux, assistant professor of podiatry, Loyola Medicine, Chicago.

Researchers also looked at other factors, and determined they did not influence the risk of injury. Those factors included the runner’s age, mileage on the shoes, if the runner was wearing orthotics, and the width measurement from ball to heel.

The study looked at all shoe types, except for barefoot/minimalist shoes, Dr. Dux said. Runners in the control and subject groups had the same injury correlation for your shoe regardless of the type of shoe you are wearing, and you can wear a shoe that is comfortable,” Dr. Dux said. “If you feel better in a neutral shoe or a cushioned shoe over a stability shoe, despite the fact you have a flat foot, that is not going to increase your risk for injury.”

Researchers also looked at other factors, and determined they did not influence the risk of injury. Those factors included the runner’s age, mileage on the shoes, if the runner was wearing orthotics, and the width measurement from ball to heel.

The study reviewed the cases of 166 patients, and 86 were included in the analysis. They received SPECT/CTS or
Transmetatarsal Amputation: A Viable Treatment

Transmetatarsal amputations led to 88 percent of patients in a retrospective study walking within one year after the amputation, demonstrating the viability of the surgery, said David A. Pougatsch, DPM, associate medical director at the Amputation Prevention Center at Sherman Oaks Hospital, Los Angeles.

The study looked at 50 consecutive transmetatarsal amputations in 48 patients. All but two of the patients were diabetic, and the majority had some occlusive vascular disease. The study noted whether patients needed vascular surgery and whether the intervention was endovascular, open bypass, or both. Amputations were performed for either gangrene, infection, or to close a wound. The number of patients in each category ended up being about the same, Dr. Pougatsch said.

"The question that is commonly discussed in the podiatry circle is, ‘What is the point of doing this amputation in a group of sick people? Why not just do a leg amputation below the knee?’ You can debate forever which is the best surgery to do,” he said. "The ultimate conclusion is that 37 out of 42 patients were able to walk with a transmetatarsal amputation after a period of a year."

"We followed patients from four months to two and a half years. Nearly half had complications, including wound dehiscence, infection, or an ulcer at a separate location due to pressure, but they ultimately went on to heal with or without additional surgery.”

The key to their success was having all of the patients’ limbs revascularized in a time-frame due to pressure, but they ultimately went on to heal with or without additional surgery.”

"The old adage that ‘time is tissue,’” he said. “The less delay there is in treating these patients, the higher the salvage rate. If you are able to preserve tissue and perform a midfoot amputation before gangrene or infection sets in, the ultimate success is greater.”

"In terms of energy expenditure, functionality, and the psychology of the patient, doing everything you can to preserve a functional foot will go a long way in helping the patient return to a normal life. We always joke around, telling our new patients, ‘You might not have walked into our office, but you will walk out.’"
nosis, but if you have to guess, you should allow a reasonable amount of time for your treatment to work. If that does not work, then regroup and rethink," he said.

**New Topicals Available to Treat Onychomycosis**

Studies show that physicians in general are able to accurately diagnose fungal nail disease through clinical observation, but laboratory tests are a more cost-effective method of diagnosis. In addition, the Food and Drug Administration has approved two new topical treatments for onychomycosis in the last few weeks.

Tracey C. Vlahovic, DPM, associate professor and J. Stanley and Pearl Landau Faculty Fellow at Temple University School of Podiatric Medicine, Philadelphia, discussed these issues during "Treating Onychomycosis, Warts, Scars, and Neuromas" in her second presentation, "Dermatology Boot Camp: Practical and New Approaches to Skin Conditions Seen in the Office."

Among the conditions she discussed were allergic contact dermatitis, *pyoderma gangrenosum*, diabetic foot wounds, vascular problems such as plantar fasciitis, neurotrophic wounds, and pyoderma gangrenosum. Diabetic foot wounds are associated with underlying vascular disease and may be complicated by infection. Wound healing may be slow, and at times it can be delayed. Our goal is to develop treatments that will accelerate healing and improve patients' quality of life.

**Laser Treatments for Onychomycosis, Warts, Scars, and Neuromas**

Eight lasers have been approved by the FDA for use in the United States to treat onychomycosis, and lasers of various wavelengths are increasingly used to treat problems such as plantar fasciitis, neuromas, diabetic neuropathy, neuritis, and swelling from sprains and strains.

"This is very exciting technology with really good results and no side effects," said Michael A. Uro, DPM, Sacramento, CA, who presented "Laser in the Lower Extremities: Onychomycosis, Warts, Scars, and Neuromas."

The most common laser is a 1064 YAG long-pulse, which uses the 1064 nanometer wavelength to treat onychomycosis. It heats the nail to kill fungal organisms.

A newer laser recently approved by the FDA uses the 870 and 930 nanometer wavelengths, which do not create as much heat. On the horizon is a laser not approved for use in the US but used in the United Kingdom. It uses two low-level wavelengths—405 and 635 nanometers—and has a 92-percent success rate, he said.

The 1064 YAG laser also has been used with great success to treat neuromas, warts, superficial and deep scar tissue, and plantar fibromatosis.

"There are no formal studies for the treatment of neuromas using the 1064 YAG laser, but anecdotaly several of us in the field have used it for that purpose with really good results," Dr. Uro said.

A variety of common skin conditions, their differentials and treatments were reviewed by Dr. Vlahovic in her second presentation, "Dermatology Boot Camp: Practical and New Approaches to Skin Conditions Seen in the Office."

"This is very exciting technology with really good results and no side effects," said Michael A. Uro, DPM, Sacramento, CA, who presented "Laser in the Lower Extremities: Onychomycosis, Warts, Scars, and Neuromas."

"We have several conditions where lasers are very useful, such as *pyoderma gangrenosum*, diabetic foot wounds, vascular problems such as plantar fasciitis, and neurotrophic wounds."

"Our goal is to develop treatments that will accelerate healing and improve patients' quality of life."
APMA is pleased to announce the 2015 Annual Scientific Meeting, The National, will be hosted in Orlando, Florida.

Register today at www.apma.org/thenational.
PMA Program Enhances Patient Care and Practice Management Skill

The APMA 2014 Annual Scientific Meeting (The National) is once again home to the Podiatric Medical Assistants’ Educational Program, in cooperation with the American Society of Podiatric Medical Assistants (ASPM). PMAs rely on The National for education, training, and networking.

“There is no college for podiatry assistants. [The National] is where we get our education,” said Michelle Handley, PMAC, scientific program chair at ASPM.

Handley is just beginning her new role as scientific program chair but has extensive experience with ASPMA. She has worked as an assistant with the same doctor, John Grady, DPM, in Oak Lawn, IL, for the last 28 years, and has been involved in both ASPMA and her state podiatric medical assistants’ association since 2005.

The Podiatric Medical Assistants’ Educational Program is a balance of PMA-only sessions and shared lectures with podiatrists. This combination allows assistants to get a better understanding of what is happening in podiatry while also providing specific instruction for their daily functions in the office.

“We have a really strong group of doctors and assistants presenting this year. I think the program is really beneficial to attendees in terms of current trends in podiatry,” Handley said.

One session that took place yesterday, “Podiatric Medicine: The Basics and Beyond,” was particularly important to PMAs. “Given the recent changes in how we operate with EHR systems and other advances, I think it is really important to focus on the basics of patient care. We can’t become complacent; we need to make sure all the important patient information is being captured for our doctors.”

Another session from yesterday, “The Diabetic Foot,” was also a highlight for many assistants.

“This [topic] is a personal passion of mine,” Handley said. “As a country, we aren’t getting any healthier. It is one of the biggest issues we deal with, and I think it is a fantastic opportunity for assistants to get a better understanding of how diabetes affects the foot specifically and the entire body in general.”

Sessions dedicated to office managers and practice management also are part of this year’s educational program. Customer service, marketing, and billing are essential duties for many assistants.

In addition to educational sessions, PMAs attending The National have the opportunity to become a Certified Podiatric Medical Assistant (PMAC).

“Personally, having my PMAC is about pride. I am proud to have worked so hard to earn this certification. I take pride in knowing that my doctor and my patients know they are in good hands when they see that certificate on the wall,” she said.

The National also provides an excellent opportunity for assistants to make connections and network.

“I love to talk to assistants in other states. It is nice to know they are going through the same things we are. There are a lot of changes happening in health care right now, and it is great to be able to talk to other assistants about issues we are having, and say, ‘Hey, we are just as frustrated as you are.’ We can find out who has dealt with a similar situation and offer solutions,” Handley said.

PMAs in attendance should make plans now to attend next year’s meeting in Orlando, FL, July 23–26, 2015. Stop by the APMA booth (#623) for more information.
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