

SYNERGY

THE VOICE OF THE AMERICAN PROFESSIONAL WOUND CARE ASSOCIATION



WINTER 2006

CONFERENCE SNEAK PEEK

2006 National Conference Is Over the Top with 28 Hours of Available Education



Wyndham Philadelphia at Franklin Plaza.

by Larry Schuster, DPM, FAPWCA, FACFS

The fifth annual conference will kick off Friday, April 7th at 8:00 a.m. at the Wyndham Philadelphia at Franklin Plaza. Ira Herman, Ph.D., FAPWCA, will present the initial lecture. Dr. Herman brings his vast knowledge on the cellular aspects of wound healing.



Ira Herman, Ph.D., FAPWCA

The lecture will be complimented by Ross/Abbott's sponsorship of a full breakfast buffet. This opening event affords a great opportunity for participants to mix with their colleagues, learn new facets about the healing of wounds and start the day with a hearty meal.

Michael Edmonds, MD, from the UK, will deliver the keynote address as the morning session continues. Dr. Edmonds' keynote lecture will feature a comprehensive, world wide understanding of the diabetic foot. Dr. Edmonds is one of the most prolific



The city of Brotherly Love, Philadelphia, and it's many attractions.

authors on the diabetic foot and travels around the world addressing this topic.

Other leaders in the field of wound care, Drs. Robert Frykberg and Jeffrey Niezgoda will share their expertise with cutting-edge knowledge on the diabetic foot, amputation prevention and methods of treating infection. Peter Sheehan, MD, another icon in diabetes and

related complications will share the podium with Dr. Edmonds to discuss the results of American and European clinical trials for bi-layered skin substitute. Both Drs. Sheehan and Edmonds were involved in the clinical trials so their remarks about

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FEATURED ARTICLE

Silver Resistance, Actual Level of Silver Ions in a Wound and Negative Wound Healing Outcomes: A Brief Review of Related Subjects

by Debashish Chakravathy, Ph.D., FAPWCA

The use of silver containing wound dressings as a means to control bioburden within a wound is an increasingly accepted clinical concept. It is now generally known that the presence of controlled quantities of silver ions in a wound dressing matrix generates an environment that is hostile to pathogens, which is in turn is helpful to wound healing.

A topic of active discussion is what the *right* levels of silver ought to be in the ideal silver containing wound dressing. Two recent reviews on the subject have suggested that a high level of silver ion, such as the level that arises from the use of nanocrystalline silver products, is optimal (1. Infection and the chronic wound, Warriner R, Burrell R. *Advances in Skin &*

Wound Care, 18, Suppl. 1, (2005), 1-12. 2. A discussion of silver as an antimicrobial agent: alleviating the confusion. Brett D. *OstomyWound Management*, 52, Issue 1, (2006), 34-41). These opinions come from the point of view that a high degree of silver ion availability in the wound environment leads to super-rapid pathogen kill rates, a phenomenon that discourages the development of mutant pathogenic strains.

There exists the possibility that high levels of silver/silver ions may interfere with the process of healing. *In vitro* data exists to show that high levels of silver ions is excessively cytotoxic, and potentially harmful to proliferating cells in a wound bed (*In vitro* cytotoxicity of silver: implication for clinical wound care. Poon V, Burd A. *Burns* 30, (2004), 140-147). A peer reviewed study also discusses the possibility that dressings consisting of

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APWCA membership continues to grow steadily and currently the Association is one of the largest multidisciplinary organizations in the United States. We have a very high retention rate of membership as well. As always, we encourage each member to bring a new member into the association each year. Should membership continue its steady pace of growth, we will become the largest organization of its kind before the end of this year.

Our new logo is shown on the banner portion of this newsletter. We thank all those involved with the committee that worked on the logo. The symbol represents synergy and coming together of disciplines and also represents cell mitosis involved with wound healing.

A power point 70 slide presentation on the fundamentals of wound healing is now available for members. The slide set includes photographs of wounds and dressings and can be enhanced with your own cases to present to clinical staff, long-term care facilities and other places where our members have the opportunity to lecture. We extend a sincere thank you to James McGuire, DPM, PT, FAPWCA director of the Leonard Abrams Center for Advanced Wound Healing at Temple University School of Podiatric Medicine for his involvement in this project. The slide set is available on CD ROM and is priced at \$100 for members and \$250 for non-members.

APWCA has been involved with CMS with regulatory and billing issues. The issues include the 2006 reimbursement allowance for genetically engineered skin replacement therapy and lack of reimbursement for negative pressure therapy application by physicians in the office.

American Professional Wound Care Student Association (APWCSA) is up and running at the Temple University School of Podiatric Medicine and the

New York College of Podiatric Medicine. APWCA encourages members who are interested to initiate similar student chapters at other schools of medicine, podiatric medicine and nursing. The by-laws can be modified and implemented as appropriate and are available through the student association. The APWCSA will also have a meeting during our National Conference and will have a representative to participate as a liaison with the APWCA Board of Directors. The Students' Association provides a great opportunity to build the synergistic aspect of the disciplines involved in wound care. Please contact APWCA headquarters if you have an interest in initiating a program in a school of your medical profession.

Reminder: credentialed members (i.e., FAPWCA, DAPWCA, AAPWCA) must attain a minimum of 21 medical education hours in wound care every three years to maintain the credentialed status. Current membership has until March 2007 to achieve that objective.

We have formed four regional districts to better maintain grass roots contact with our growing membership. The first regional conference was held for the Western District December 3-4 in Los Angeles. This was a very successful effort and we thank the district delegates and the faculty for their efforts in participating.

I encourage all members to attend our **2006 National Conference**. Other articles in this issue of Synergy provide additional information. We also encourage our members to bring non-members with them, (physicians, nursing staff, etc.) as many attending the National Conference often join the APWCA

I look forward to seeing you in April at the National Conference and thank each of you for your continued support of this organization.

PRESIDENT'S PERSPECTIVE

Robert Gunther, DPM, FAPWCA



The American Professional Wound Care Association has been in existence for five years now. I am proud that the organization is strong and growing rapidly in a multidisciplinary fashion. We are impressed that more nurses are joining as well as physicians in a wide range of specialties. The APWCA is successful because of the depth of varied experience of our membership. Synergy is defined as the whole being stronger than the sum of its parts. For this I thank the membership, medical advisory board, board of directors, executive board and the executive director/founder. The synergy created by our multidisciplinary structure and our increased numbers will gain us more "political clout" and will empower our legislative initiative.

In its five year history, the American Professional Wound Care Association is approaching 1,600 members. In order to maximize our influence on political issues and to provide increased benefits to our membership, the APWCA has initiated a membership drive to propel itself to be the undisputed largest multidisciplinary wound care association in the United States.

We are simply asking each member to encourage two members to join the APWCA. This can be anyone you work closely with or who is part of the wound care team. Examples of potential members include nurses, assistants, physicians, therapists, pedorthists and other colleagues. What better way to strengthen our organization, through building our membership with the people you work side by side with everyday?

As a thank you for referring two of your colleagues who join, you will receive free registration for any pre-conference course at the APWCA 2006 National Conference. This has a value of \$165.00.

We've come so far since the inception of the APWCA, yet the key to continued growth is through your personal involvement. In a little more than five years, the American Professional Wound Care Association is not only recognized for its superb conferences and educational tracts, but also for initiating research programs. AAPWCA has developed an informative website with helpful resources and generated greater involvement with CMS to try to protect you regarding legislative issues. APWCA leadership and members alike have written new articles in such publications as our endorsed journal, *Advances in Skin and Wound Care* and in *Podiatry Management*. Dr. Kravitz and I have begun to educate the public at large by highlighting these issues and the insurmountable difficulties in providing care on a local cable TV program hosted by a state representative who has been supportive of the plight of the health care system. It is anticipated that with a larger membership, we will be able to obtain media coverage to reach a larger audience for voicing the challenges in offering the care that your patients deserve.

Explain to your colleagues why membership in the APWCA is critical for their professional growth. Remember that increased multi disciplinary membership will keep the spirit and momentum going. This is your organization representing you. Be part of the growth process so that when the APWCA becomes the most influential educational organization addressing the multifaceted complex issues in wound care you are part of the solution to these critical issues.



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Colleagues and friends, as wound care professionals we must prepare ourselves for two major time bombs facing the health care delivery system. Our role as healers will become many times more demanding and important in the next 20 years. Results of a joint report by the Yale School of Public Health and Medicine and the Institute for Alternative Futures was announced November 9, 2005. The report forecasts the dramatic consequences of the diabetes epidemic. If the barriers to diabetes prevention and treatment are not seriously addressed and care is not improved in the United States, projections for 2025 indicate staggering number of deaths associated with diabetes as well as the cases of blindness and amputations. Issuing an alarm, the World Health Organization (WHO) and the International Diabetes Foundation report the number of worldwide sufferers would more than double to 366 million by 2030, from some 171 million at present. Although diabetes is often thought to be a rich-country disease, it is in poorer countries that diabetes is growing fastest, with cases seen rising 150 percent over the next 25 years. In India, for example, the number would leap from 32 million to 80 million.

The baby boomers entering retirement represent the other time bomb. The first

of the boomers, born between 1946 and 1964, will turn 65 in 2011. By 2030, the 65-plus segment will account for approximately 20% of the U.S. population, twice the 65-plus share in 2000.

Finn Gottrup, MD, DMSci, a Professor of Surgery at University of Southern Denmark, supports our concept of interdisciplinary cooperation in his article published in the *American Journal of Surgery* 2004 May;187(5A):38S-43S. His findings support our approach that the optimal way to improve prophylaxis and treatment of patients with problem wounds is to create an interdependent multidisciplinary wound-healing center. This center focuses on all types of problem wounds and has an outpatient clinic, as well as an inpatient ward. He states an integrated wound-healing department concept should be a standard in wound healing.

Our organization has realized the synergy created by multidisciplinary cooperation. The APWCA recognizes this crisis. In association with world wound care leaders and our emphasis on multidisciplinary cooperation, we will continue to be leaders in our field. Our 2006 National Conference will feature eminent leaders in many disciplines and from other countries. Join us in our mission to address the future.

Pneumatic Medicine and Rapid Wound Healing

by Laura F. Jacobs, MD, PhD, FAPWCA

As wound care specialists, each of us struggles to heal patient wounds that stubbornly persist for months, if not years. Often, we see little real improvement, and at times the wounds actually worsen, despite dedicated healthcare practitioners and time consuming and expensive treatments.

Today's modern wound care centers focus primarily on the importance of maximizing the wound microenvironment in order to promote healing. Dirty wounds are cleaned, necrotic tissue is debrided, infections are hit with antimicrobials, weight bearing surfaces and bony prominences are off-loaded and advanced wound dressings, topicals and growth factors are liberally employed.

Almost all patients with non-healing wounds, however, have some clinically significant degree of underlying circulatory compromise caused by arterial, venous, or lymphatic insufficiency. Often, there is pathology in two or even all three of these vascular systems. Even those with "normal" vascular studies may have poor microcirculation because of such co-morbidities as diabetes, obesity and atherosclerotic disease.

Additionally, there may be very high tissue pressure in the wound area due to indolent cellulitis, lymphatic engorgement, induration, fibrosis or edema. The excessive tissue pressure further inhibits adequate arterial, venous and lymphatic microcirculation, resulting in chronic, non-healing lesions even after achieving a favorable microenvironment.

Recently, Pneumatic Medicine was developed to address peripheral microcirculatory compromise. Simply defined, Pneumatic Medicine is the use of external, dynamic pneumatic compression to treat a wide array of peripheral vascular diseases including venous insufficiency, lymphedema and chronic wounds. It is considered a welcome adjunct to other treatment options, including surgery, gradient compression stockings and medications.

Pneumatic Medicine sharply highlights the vast physiological difference between static pressure and dynamic compression to improve peripheral microcirculation. Normal physiology uses several dynamic compression mechanisms, such as the muscle pump of the legs and peristalsis, to aid circulation and fluid flow. Accordingly, wound healing treatments should move away from non-physiological static pressure techniques to more dynamic compression strategies that promote and enhance microcirculation.

The core component of Pneumatic Medicine is the NormaTec PCD, a new, state-of-the-art pneumatic compression device (Figure 1). Pneumatic compression devices, formerly called "lymphedema pumps," have been available for over 40 years for treating lymphedema and venous stasis ulceration.

The NormaTec PCD's patented Peristaltic Pulse dynamic compression waveform is designed to simulate normal physiology. The waveform's pulse-gradient hold-release sequential action incorporates the dynamic compression of both the muscle pump and peristalsis to effectively promote microcirculation and aid wound healing. A typical wound care patient uses

the device approximately one hour per day in a home treatment program until the wound is completely healed. To prevent the reoccurrence of wounds, it is usually recommended that the patient continue to use the device for one hour every two to three days. The NormaTec PCD is FDA cleared for the treatment of venous stasis ulceration and chronic wounds, venous insufficiency, lymphedema and other edematous conditions and the prevention of deep venous thrombosis.

It is equally crucial to make the device user friendly, simple to prescribe and, most important of all, covered by Medicare and other health insurers. NormaTec has done exactly that, and also provides training in clinical protocols so that wound care specialists can easily incorporate Pneumatic Medicine into their practice. Furthermore, a built-in monitor on the device discreetly tracks patient compliance and newly designed toe caps eliminate any patient discomfort.

One such wound care center is the Southwest Regional Wound Care Center in Lubbock, Texas. Founded and directed by Randall Wolcott, MD, FAPWCA, a Board certified specialist in both Physical Medicine and Rehabilitation and Family Practice, the Center and its staff of experienced wound care specialists (physician assistants, nurses and aides) has been using Pneumatic Medicine in their treatment protocols since February 2005. After on-site training provided by NormaTec, the Center's medical staff could quickly assess appropriate candidates for Pneumatic Medicine and prescribe and use the NormaTec PCD, all with minimal effort. Their patients use the PCD at home as part of the Center's overall treatment regimen.



Figure 1: The NormaTec PCD



Figure 2



Figure 3

Soon after beginning to prescribe the PCD, the Center reported dramatic clinical outcomes and two of their case studies are presented below. Additionally, Dr. Wolcott will be speaking at the **APWCA National Wound Care Conference** as part of the April 2006 Annual Scientific Address, where he'll further detail his experiences with Pneumatic Medicine and the NormaTec PCD. These case studies and clinical photos and are courtesy of the Southwest Regional Wound Care Center.

Case 1: Mr. X is an 80-year-old male with bilateral lower extremity venous insufficiency and lymphedema. His past medical history included osteoarthritis, hypertension, hypercholesterolemia, hypothyroidism, and Parkinson's disease. He had two prior episodes of leg cellulitis, one of which required IV antibiotics, and he originally presented to the Center with a chronic, non-healing wound on the anterior surface of his lower leg (Figure 2).

Pneumatic Medicine treatment was prescribed for Mr. X along with the other wound care treatments typically used at the Center, and after using the PCD at home for approximately one hour per day for four weeks, the wound had completely healed (Figure 3).

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Alliance Organizations Stress Concerns of Competitive Bidding on Medicare Patients at CMS Meeting

By Marcia Nussgart, R.Ph., AAPWCA



Representatives from the Alliance of Wound Care Stakeholders organizations, Dr. George Taler, Sharon Baranoski, DAPWCA and Thomas Jeffers, educated Centers for Medicare and Medicaid Services (CMS) officials on how competitive bidding of support surfaces, if implemented, would impact physicians, clinicians, manufacturers, providers and most importantly, Medicare beneficiaries.

These individuals were selected by CMS staff to serve on a home medical equipment (HME) panel and speak at the September 26-27, 2005 Program Advisory and Oversight Committee (PAOC) meeting on competitive bidding. They were nominated by Alliance participating organizations, National Pressure Ulcer Advisory Panel, Wound Ostomy Continence Nurses Society, Coalition of Wound Care Manufacturers and the National Association for Support of Long Term Care. The PAOC is a group assembled to advise CMS on how to craft a competitive bidding program for durable medical equipment prosthetic and orthotic supplies (DMEPOS).

The HME Panel was one of 6 panels convened by the PAOC which also included rehab/assistive technology, respiratory, diabetic supplies, orthotics and prosthetics, and beneficiary organizations. In preparation for implementation of competitive bidding in 2007, CMS staff was interested in obtaining input on the impact of competitive bidding on these particular product sectors. Currently, the products that will be competitively bid have not been selected; however, stakeholders are awaiting the publishing of a proposed rule which will give details on criteria for site selection, item selection, bid evaluation process and structure for implementation.

Even though CMS designated the panel as HME, the speakers devoted most of their speech to addressing support surfaces since it involves a complex mix of medical devices, service and care that makes it inappropriate for competitive bidding. By including support surfaces in a competitive bidding program, reimbursement could be decreased to a level that forces providers to reduce services. That, in turn, could reduce patient compliance and outcomes, and result in more costly emergency room and hospital visits.

The HME Panel emphasized that to continue to provide Medicare beneficiaries with the continued quality and support, care must be taken to ensure that pricing is not the only consideration in the bid process. Instead CMS must consider the following factors:

- Clinical complexity of patients who need the products
- Ensuring patient access to appropriate and quality HME
- Access to quality providers who provide the necessary services
- Streamlining documentation
- Ensuring that the innovation process for new technology is not stifled
- Expanding HCPCS coding to represent the extremely wide array of products of varying quality, technology, function and efficacy

Dr. George Taler, Director of Long Term Care at Washington Hospital Center in Washington DC, spoke of the home care physician's concerns with competitive bidding. He described the complexity of the wound care patient and the physician's need to prescribe a wide range of support surfaces due to the diverse patient population. Dr. Taler addressed his expectations for equipment and supplies in that they meet both the clinical and functional needs of the patient. His concerns with competitive bidding also included the need to have access to niche providers who provide the necessary services for his patients. He also detailed his concerns regarding documentation which include the careplan oversight and certificates of medical necessity. He warned that competitive bidding might place wound care patients at risk and that the price of failure of treating them appropriately was high—in increased use of emergency departments, avoidable hospitalizations, nursing home placements and misspent personal and societal resources.

Sharon Baranoski, MSN, RN, CWOCN, FAAN, DAPWCA, Administrator, Home Health at Silver Cross Hospital in Joliet, Illinois stressed the clinician's role by establishing a comprehensive plan of care for patients in the home care setting and the need for appropriate home medical equipment. She emphasized two clinicians' concerns with competitive bidding:

- Limit of patient access to appropriate home medical equipment for their care needs
- Limit of patient access to quality providers who provide the necessary services

She posed the following questions to the PAOC:

- "Will there be enough providers both in rural and metropolitan areas to provide the service that our patients need?"
- "Will the only providers that win the bids be ones who drop off equipment and haven't been trained in proper set up, patient care instructions, follow-up, maintenance needs and safety?"
- "Will the only providers who win the bids be ones who deliver equipment that they have in stock versus what is ordered?"

In addition to the Panelists' presentations, there was discussion of the newly released draft of the draft of quality standards for suppliers. Eventually, all DMEPOS suppliers who want to participate in Medicare will have to meet the quality standards—including business and product-specific requirement—which will be applied by CMS approved accrediting bodies as mandated under the Medicare Modernization Act.

More information about the meeting, the presentations, and the quality standards can be found at:

<http://www.cms.hhs.gov/suppliers/dmepos/compbid/paoc.asp>.

Pneumatic Medicine and Rapid Wound Healing *(Continued from page 4)*



Figure 4



Figure 5



Figure 6

Case 2: Mrs. Y is a 75-year-old female with bilateral lower extremity venous insufficiency and multiple deep non-healing wounds on the dorsum of her left foot (Figure 4). Her past medical history was significant for a cardiac arrhythmia, congestive heart failure, diabetes, and diabetic peripheral neuropathy. She had several prior episodes of cellulitis, at least one of which required hospitalization for IV antibiotics.

Mrs. Y was also treated with Pneumatic Medicine and after three weeks of daily home treatment, the wound was completely healed (Figure 5). She continued to use the device in a maintenance program and after three months the wounds remained completely healed (Figure 6).

(1) Jacobs, L., Magnuson, R., and Alexander, M. **Lymphedema Treatment: Precision of Pneumatic Compression Devices.** *Arch PM&R* 72(10): 781, 1991.



APWCA has added a satellite

DINNER SYMPOSIUM

to the Annual Conference agenda

Sponsored by HEALTHPOINT Tissue Management

Thursday, April 6, 2006---5:45 to 7:00 p.m.

Wyndham Franklin Plaza Hotel---APWCA Conference host hotel

Registration Required and Pre-registration Preferred
Open to all Pre-Conference and General Sessions Registrants
Seating is limited.

Please contact APWCA headquarters for registration.

Innovations in Orthoses



By Myron Z. Bernstein DPM, CWS, FACFAS, FAPWCA

Accommodative orthotic therapy has long been an accepted method of treatment of a wide range of pathologies that affect the diabetic foot, offloading plantar ulcerations, and the stabilization of a Charcot deformity. Since the development of Medicare's Therapeutic Shoe Bill deformity specific orthosis has come of age. Now we can not only accommodate the deformity but can specifically address the focal points of pressure. This important innovation has changed the orthotic industry and lead to better design for diabetic inserts.

There are various methods of fabricating orthotics, but none is as sophisticated as orthosis designed through automated manufacturing. Instead of making a positive mold from the cast then having to modify that positive, the automated orthotic manufacturing system digitally lifts a 3-dimensional replica of the plantar surface of the foot. Experienced technicians will then "dress" the image, using a computer enhanced program. This takes the guesswork out of Dr. Root's traditional, plaster modification technique. The automated system

stores the digital positive for convenient recall (no longer needing to store the plaster molds), and then can manufacture an orthotic with closer tolerances. The orthotic shell is now able to be made with some of the newest, state of the art polymers, giving a longer lasting as well as better fitting appliance. It is interesting to note that many of the new foams and top cover materials are topically treated to make them antibacterial and anti fungal.

Your lab should be well-versed in these materials and should have field-tested them to determine their wear ability and reliability. They should guide you in to choosing materials that are lightweight, durable, and hypoallergenic; that are patient-friendly and can be wiped clean with a damp, soapy cloth, and can also be regenerated with a warm-air flow (like the heat from a blow dryer). Your lab should encourage you to discuss each and every case with lab professionals who are aware of the many products and design features specific to your patients needs.

Earthwalk Orthotics Inc. 1-888-492-8393 is a laboratory using this new technology and materials.

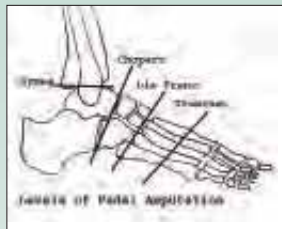
Chopart Amputation with use of Vacuum Assisted Closure



By Larry Schuster, DPM, FACFS, FAPWCA

Major non traumatic lower extremity amputations are associated with considerable morbidity and mortality. One long-term survival study revealed 62% at 1 year, 50% at 2 years and 29% at 5 years. Foot amputations are unfortunately necessary, but not desirable procedures. Preservation of as much of the lower extremity as possible will prolong life as well as save precious medical resources in the long run. Our goal is to salvage as much of the foot in a plantigrade position with an adequate soft tissue envelope and achievement of a result that can be accommodated with shoe gear and bracing. If this is not possible, then a higher amputation must be considered. Planning for this must include evaluation of the patient's ability to benefit functionally from this procedure. Adequate circulatory status and ankle mobility should be assessed prior to this consideration.

Chopart's Amputation was first described by Francis Chopart as a disarticulation through the midtarsal joint, saving the talus and the calcaneus. This is a very unstable amputation, noting that most of the tendons which act about the ankle joint have lost their insertion into the foot. The heel remains unstable and has a pronounced tendency to go into equinus and must usually be fitted with a prosthesis that extends up to the patellar tendon level.



Transmetatarsal (TMA) and Lis Franc amputations frequently fail due to boney projections and imbalance, but Chopart's by eliminating the cuboid may not be as likely to go into varus.

Case Study

The patient is a 73-year-old woman, seen for evaluation of cellulitis at the site of a previous left transmetatarsal amputation performed two months prior. The patient had an underlying history of an ischemic episode due to a blood clot which was resolved. This short period of ischemia resulted in the TMA at another institution. She was admitted to our hospital because of erythema and cellulitis noted at the site of this amputation.



Past Medical History

1. Notable for the TMA 2 months prior.
2. She also had the diagnosis of glioblastoma.
3. She is status post gastrectomy in 1975 and had cholecystectomy done in 1976.

Extremity Examination

Left foot was status post TMA. There was a necrotic eschar present with some cellulitis extending over the dorsum of the foot. There was some purulence and her tissue culture was positive for staphylococcus aureus. Noted were barely palpable posterior tibial pulses, and nonpalpable dorsalis pedis pulses bilaterally. She had no ulcerations of the left foot, although skin turgor was

diminished. Her capillary return time was less than 2 seconds and there was no cyanosis. Her ankle joint had good range of motion. She did appear to have some neuropathy as she complained of no pain in the right foot and had a loss of 10 gram monofilament to the plantar of the left foot.

In addition, on examination of the wound there were bones protruding through the dehisced wound. The x-rays showed osteolysis and discontinuity of cortices.

Laboratory Studies:

CBC; hematocrit of 36.1%, white count 10,100, platelet count 292,000. Chemistries: Unrevealing. Blood glucose levels remained normal throughout her stay without hypoglycemic medication.

Initial Care:

The patient had peripheral vascular disease with a poorly healing wound. She was started on empirical antibiotics by an infectious disease consultant, with concern about resistant gram positive cocci and gram negative rod, given her recent hospital stay. She was initially placed on Unasyn empirically and then once culture results were obtained, she was placed on a combination of Vancomycin and Levaquin. The situation was discussed with the patient as any further surgical intervention would leave even less weight-bearing surface and with her poor circulation it would not be likely that she would heal. The patient was vehemently opposed to a below-knee amputation. A vascular consultant also agreed that below-knee amputation might be better but suggested surgical debridement and attempt at closure of this wound, giving the patient at least a calcaneus on which to weight bear.

Procedures:

Debridement of infected and devitalized tissue including tendons as well as bone was performed leaving only the calcaneus and talus. Removed were the cuboid, cuneiforms the remaining portions of metatarsals and the navicular bone. No tendon rebalancing or reattachment was performed and an Achilles tendon lengthening was not performed. Tendon rebalancing is more commonly done with traumatic amputations and PVD patients are best served by excision of involved tendons as they have a poor blood supply and extend proximally. Compromised tendons are frequently a conduit for spread of infection.



Status post initial debridement of calcaneus and talus visible

Partial closure was accomplished with negative pressure therapy utilizing the V.A.C.® Therapy System (Kinetic Concepts, Inc., San Antonio, TX) which was placed after the initial debridement. However, there was not enough skin to close the wound. The V.A.C. Therapy dressings were changed at three day intervals using careful aseptic technique. The device was set at continuous 125 mm Hg negative pressure. On the ninth postoperative day, further bone and cartilage was removed from the head of the talus and the anterior calcaneus. The V.A.C. Therapy System was reapplied over this wound. Due to the lack of cartilage

continued on page 7...

Tips and Pearls for Use of an Antimicrobial Gel

By James McGuire, DPM, PT, FAPWCA

SilvaSorb™ gel is a topical antimicrobial amorphous hydrogel that delivers a sustained release of bactericidal levels of silver to the wound surface. The gel does not produce an initial release of high amounts of silver antimicrobial. Rather, as with all ionic silver, once in contact with the wound bed the gel provides a continual release of bacteriocidal levels of silver at levels not toxic to viable tissue.

By having the ionic silver applied through the medium of a hydrogel it provides a relatively inexpensive way to add the advantages of silver antimicrobial to other dressings such as contact dressings, foams, alginates, and secondary dressings thereby reducing the overall cost of application. The gel is particularly beneficial when utilized on wounds with complicated wound surfaces that may contain deep fissures or crevices.



We are often able to leave dressings with SilvaSorb gel on the wound for two to three days without apparent compromise providing exudate is appropriately managed. This eliminates the need for daily dressing changes

Topical antimicrobials have changed the manner in which many of us treat wounds. The ability to apply effective antimicrobial levels to the wound bed has in many instances reduced the need for systemic

antibiotics by preventing wound colonization from progressing to wound infection. These products are broad spectrum effecting MRSA and VRE and all other known clinically identified microbes.

We use all of the many different forms of application for silver antimicrobials at the Leonard Abrams Center for Advanced Wound Healing at Temple University. We choose products depending on the wound appearance, amount of exudate, and other factors. We have found this to be a very effective advanced wound care product that also helps reduce the overall cost of wound management. This photograph demonstrates a complex case in which SilvaSorb was selected for a patient with severe lymphedema, verrucoid skin with deep crevices secondary to lipodermatosclerosis. The patient had developed fissures secondary to acute dermal disruption ulceration with multiple bacteria identified including MRSA. The SilvaSorb™ was applied under a multilayer compression dressing with excellent reduction in odor and hydration of the wound bed.

From the editor: There has, been a tremendous increase in available topical antimicrobial applications which include a large number of silver products, cadexomer iodine and hexamethylenbiguanide. All three of these are broad spectrum and address the resistant strains of MRSA and VRE. Polyhexamethylenebiguanide (PHMB) is an antimicrobial used with the cellulose based wound dressing Xcell™. A previous article in "Synergy" (Spring/Summer Edition 2005) describes use of this product. The article can be found in the newsletter section of our web site.

Chopart Amputation with use of Vacuum Assisted Closure *(Continued from page 6)*



Healed four weeks post-operatively

and the action of the V.A.C. Therapy, granulation tissue began to grow abundantly over the bone allowing for further soft tissue padding and eventually the wound was closed primarily. Sutures remained in place for three weeks and were then removed. No ambulation was permitted on this foot for the entire three-week period. After another two weeks an impression for a shoe and brace was taken. The patient was very happy with her result and her ability to

walk with a walker and do wheelchair transfers on her own.

Summary:

This amputation's success can be attributed to many factors which do not usually exist in an infected foot. This patient was not a diabetic, her loss of circulation was reversed and she had adequate blood flow for healing. Her ankle had a good range of motion and ambulation was important to her. The infection was controlled rapidly, and through meticulous postoperative care further infection was avoided. V.A.C. Therapy assisted in initially getting the infection under control by removing interstitial fluid allowing tissue

decompression and removing infectious materials and then in promoting granulation tissue formation. The V.A.C. Therapy System uniformly draws wounds closed by applying controlled, localized negative pressure and also provided a closed, moist wound healing environment.

References:

1. Ploeg AJ, Lardenoye JW, Vrancken Peeters MP, Breslau PJ. Contemporary series of morbidity and mortality after lower limb amputation. *Eur J Vasc Endovasc Surg.* 2005 Jun;29(6):633-7. Epub 2005 Mar 28.
2. Cruz CP, Eidt JF, Capps C, Kirtley L, Moursi MM. Major lower extremity amputations at a Veterans Affairs hospital. *Am J Surg.* 2003 Nov;186(5):449-54.
3. Reyzelman AM, Hadi S, Armstrong DG. Limb salvage with Chopart's amputation and tendon balancing. *J Am Podiatr Med Assoc.* 1999; 89(2):100-3.
4. Argenta, L.C., Morykwas, M.J. Vacuum assisted closure: A new method for wound control and treatment: Clinical experience. *Annals of Plastic Surgery,* 1997; 38(6): 563-77
5. Joseph, E., et al. A prospective randomized trial of vacuum assisted closure versus standard therapy of chronic nonhealing wounds. *WOUNDS,* 2000; 12(3): 60-7.

S A V E T H E D A T E !

What: APWCA 2006 NATIONAL CONFERENCE

When: April 6-8 2006

Post Conference Course: April 9

Where: Wyndham Philadelphia at Franklin Plaza, Philadelphia, PA

Contact: APWCA Office 215-364-4100 or visit us at www.apwca.org

Mark your calendar now!

Join world class wound care leaders to share strategies for maximizing patient care and health outcomes.

2006 National Conference Is Over the Top with 28 Hours of Available Education

the results from the clinical research will focus on their first-hand experience. Dr. Sheehan's credentials include past chair of the Foot Council of the American Diabetes Association as well as chairing committees for medical associations dedicated to vascular disease and other related complications.

Lunch, breakfast and food breaks will be provided all three days of the conference in the exhibit area.

Highlighting the major scientific program on Friday afternoon will be topics such as nutritional aspects of wound care, the application of cellulose impregnated with antibiotics and anesthetics to provide delivery to the wound bed for infection control and anesthesia. The registrants are invited to a reception at the conclusion of Friday's programming. This reception will conclude early enough for attendees to enjoy Philadelphia's culinary and performing arts establishments.



R. Gary Sibbald, MD

Gary Sibbald, MD, FAPWCA, from Toronto, Ontario Canada, another thought leader in wound care and a returnee to our the APWCA lecture stand, will lead off Saturday morning's sessions. At the forefront of wound care, Dr. Sibbald is the chairman for the next World Congress to be held in June, 2008. He will provide an update on antibiotics followed by Allen Jacobs, DPM, FAPWCA, who will deal with the selection and use of various topical antimicrobials. The dynamic Aaron Vinik MD, will be joining the APWCA faculty, with a lecture on new concepts in diagnosis in the management of neuropathy. Pamela Unger, PT, DAPWCA, will provide an update on physical medicine for wound care.

Norma Tec has generously underwritten sponsorship of our annual scientific address and luncheon for the 2006 National Conference. The Scientific Address, "The Magic of Pneumatic Medicine: Rapid Wound Healing," will be presented by Randall Wolcott, MD, FAPWCA and Laura Jacobs, MD, Ph.D., FAPWCA.



Courtney Lyder, ND, GNP, FAAN

Courtney Lyder, ND, GNP, FAAN, returns to our faculty this year. He is a highly respected speaker in the nursing profession and will discuss deep tissue injury from the perspective of the National Pressure Ulcer Advisory Panel. Lectures continue with assessment of venous insufficiency and the nutritional interventions to prevent and treat wounds.

An international flavor to the most effective treatments in wound care will take the stage on Saturday afternoon. Drs. Sheehan, Edmonds, Sibbald, Niezgoda and other distinguished faculty members will participate in a debating panel. The topic on the table will be osteomyelitis and the differences and similarities on how this is treated in the Canadian, American and European health systems. This will be a frank, open discussion, an eye-opener to possibly considering other treatment protocols. Other lectures that follow will discuss global aspects of wound care and what we as health care professionals may learn from other countries that can be directly applicable to our patients and the care we provide.



Dr. Shankhdhar, MD, FAPWCA

Dr. Shankhdhar, MD, FAPWCA

Highlighting our international speakers will be Dr. Kshitij Shankhdhar, a Diabetologist from India with a primary interest in Diabetic Foot Care (Podiatry). He established North India's first Diabetic Foot Clinic in the city of Lucknow – the Lucknow Diabetic Foot Care Clinic & Research Centre and is currently serving as the Medical Director.



Robert Frykberg, DPM, FAPWCA

Dr. Robert Frykberg

Robert Frykberg, DPM, FAPWCA, who serves as the APWCA's Director of Research, Co-Chair of the 2006 pre-conference course and National Conference Planning Committee member, will be a busy man at this year's conference. Dr. Fryberg will lecture on prevention of limb amputations, decision making in wound care and will moderate several conference sections as well as serving on other faculty panels.

Pre-conference courses are offered for those seeking a review of basic fundamentals of wound care as well as a separate course for those seeking a more advanced insight for the experienced wound care provider. Both courses will be featured all day on Thursday, April 6 and are followed with an evening program dealing with the management of wound care practice. This evening's pre-course will provide information applicable for those in wound care centers, private practice settings and hospital based professionals. A mobile wound care center that is currently being utilized in Florida will be part of the presentation. Other features of this session will include wound care billing and related management offered from 7:00 -9:00 p.m. This special evening program is open to all those registered for general sessions as well as those taking any of the pre-conference courses.

Oral abstract presentations will mark the post conference course on Sunday, April 9, from 9:00 a.m.-12:00 noon. This session is open to all those attending the general sessions at no additional charge, although a separate registration is required. Collectively, the Thursday evening pre-conference and Sunday morning post conference sessions add five hours of continuing education to the general sessions without additional fees. Registration is required for each of these sessions.

APWCA again will set a gold standard for the scientific education program for 2006. This conference has been planned to fit the clinical needs for anyone providing wound care or participating on the team that confronts the issues facing the wound care patient. For many this is "Spring Break Week", so bring the family and experience a tremendous educational opportunity, a social program to match in a wonderful hotel located in the center of historic Philadelphia. For those interested, services for Palm Sunday may be found at many locations close to the conference center including the Cathedral Basilica of Saints Peter and Paul within walking distance. Synagogues are also available several blocks away.

Editorial: Infection a Better Working Definition

Steven Kravitz, DPM, FAPWCA

The terms infection and bioburden often describe overlapping conditions in the clinical setting. These are indeed blended terms. Where does bioburden end and infection start and what are factors that are associated with each of these?

Our previous concepts of infection being associated with specific bacterial count (10^5) do not account for the condition of the host and the degree of compromise. That is to say a compromised host will be much less able to manage bacteria growth on the wound bed due to many factors affecting the immune system and/or the circulation. Further complicating these issues is the fact that diabetic patients will often have deficient immune capacity specifically with decreased white cell function such that the signs of infection that would otherwise be present will in fact not be observed. Diabetic patients can develop significant infective processes without the systemic and/or local manifestations that would otherwise be prevalent. "Infection" should take into account the bacterial count and the condition of

the host relative to the degree of compromise. Both of these factors, I feel have an impact on the virulence of the bacteria on the wound surface. In short, a decreased immune response can increase the "relative bacterial virulence". Literature is clear that strains of bacteria carry innate virulence. That aside, I believe that in treating patients with non-healing wounds we should also consider the "relative virulence" of any specific wound surface organism, which takes into account the host's ability to contain that bacteria. A working definition of infection in this sense is a bacteria count that prevents a wound to heal. It takes into account: bacteria count, compromised host response both of which affect the relative virulence of the bacteria.

The end result of the above observations is that a bacterial count of far less than 10^5 can prevent wound healing in patients with deficient immune response.

Membership Interview and Spotlight

Synergy sat down with Dr. Mark A. DeCotiis, DPM, to discuss best practices and the latest advancements in wound healing in the private practice and wound care setting.



Mark A. DeCotiis, DPM, FCFAS, FAPWCA
Clinical instructor, University of Medicine and Dentistry of NJ, University Hospital, Newark, NJ.
Private practice, Holmdel, NJ
The Wound Care Center® at Bayshore Community Hospital, Holmdel, NJ

Synergy: "As a podiatrist, what attracted you to wound care?"

Dr. DeCotiis: "As part of my residency I did an extensive amount of wound care and limb salvage. The ability to save a patient's limb as well as their ability to ambulate is personally gratifying."

Synergy: "How has wound care changed since you first started practicing?"

Dr. DeCotiis: "The introduction of many new, advanced wound care products and technologies has changed the wound care environment dramatically. Today, I'm able to heal chronic wounds in a shorter time frame."

Synergy: "What are the most significant advancements in wound treatment options that you have applied to your practice?"

Dr. DeCotiis: "I have incorporated new technologies such as, negative pressure therapy devices, artificial skin equivalents, silver dressings and collagens into my practice. This has enabled me to dramatically increase healing rates to over 90%, well above the national average."

Synergy: "How do you stay current with the rapidly changing wound care landscape?"

Dr. DeCotiis: "I stay current by attending several wound care conferences and CME programs throughout the year. The APWCA has an outstanding line up this year. It's not to be missed. I also read journals articles on a daily basis to stay up-to-date. I've come to rely on field reps to detail me as new products are introduced into the market and to send me updated literature. They are ultimately our partners. With the rapidly changing wound care landscape, it is imperative to keep up with recent breakthroughs with all of the innovations and advancements in products and technologies. A good sales rep plays an essential role in that process."

Synergy: "What criteria do you use to determine the most clinically appropriate treatment protocol and wound dressings?"

Dr. DeCotiis: "Multiple criteria go into my treatment protocol; such as the underlying etiology of the wound, whether it is a diabetic, venous hypertension, or pressure ulceration. I ask myself questions such as, Is the wound clean or infected? Is it an acute or chronic wound? Does the patient

have any underlying conditions such as diabetes or PVD? The days of using Silvadine®, Bactroban®, and moist saline gauze for every wound, has thankfully passed us by. We now look to evidence to guide our practice of wound management. The role of today's wound care clinician is to evaluate all these criteria and tailor the treatment protocol to the individual patient's wound."

Synergy: "When would you consider a silver dressing?"

Dr. DeCotiis: "I use silver dressings on infected or colonized wounds, especially those that have cultured MRSA or are suspect to have MRSA. Chronic non-healing wounds that are not responding to treatment are often critically colonized and usually react well to silver dressings to create a wound environment compatible with healing. I use a lot of SilvaSorb®, SilvaSorb® Gel and collagen type dressings in conjunction with other advanced technologies like the VAC® and bioengineered skin."

Synergy: "What are some of your more challenging wound care cases?"

Dr. DeCotiis: "The most challenging cases are those where the patient has a myriad of medical conditions, for example diabetes mellitus, peripheral vascular disease and poor nutrition which all present obstacles to wound healing. It is essential to use a team approach and seek consultation when needed from primary care physicians and specialists such as endocrinologist, vascular surgeons, infectious disease specialists, and dieticians."

Synergy: "How do your patients obtain their wound dressing for home use?"

Dr. DeCotiis: "I refer most of my patients that need advanced wound dressing for home use to Byram Healthcare. Their service is easy to use, efficient and they deliver within two to three business days. They bill Medicare, managed care and private insurance so my patients receive full coverage on the advanced wound care dressing I prescribe. They also have a field sales force that follows through on any issue and keeps me informed on new product coverage and reimbursement guidelines."

Synergy: "Looking into the future, what advancements do you see in wound management and how will they impact your practice?"

Dr. DeCotiis: "Advancements in wound care will continue to keep up with progression in modern medicine increasing our effectiveness as wound care clinicians. I feel there will be exciting new technologies on the horizon such as genetically engineered tissue equivalents and growth factors that will continue to increase our heal rates and ability to save limbs, thus increasing the quality of life for our patients."

Synergy: "Thanks for taking time out of your busy schedule to meet with us, Dr. DeCotiis!"

Interested parties can call Byram's nation-wide toll-free number at 1-877-90-BYRAM or (1-877-902-9726), and ask to speak to their local account manager or email them at sales@byramhealthcare.com. Visit them online at: www.byramhealthcare.com.

C A L L F O R A B S T R A C T S

CALL FOR ORAL AND POSTER ABSTRACTS



Oral and Poster abstracts will be presented during the 2006 National Conference. Poster abstracts will be on display April 6-8. A Post Conference Course will be the forum for Oral Abstracts, April 9 at the Wyndham Philadelphia at Franklin Plaza.

Please contact APWCA headquarters to obtain and submit an oral or poster abstract application form. Be certain APWCA is aware of your intent to submit in order to save space for your presentation. Both oral and poster abstract materials must be received at APWCA headquarters by January 22.



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Enzymatic versus autolytic debridement of chronic leg ulcers: a prospective randomized trial. Konig et al, J Wound Care 14 (7), July 2005.

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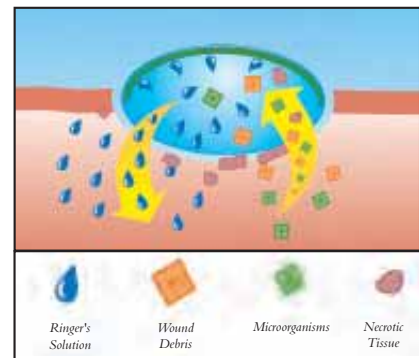
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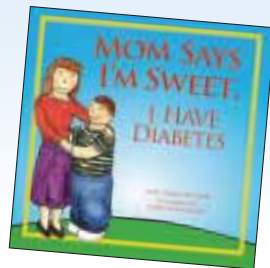
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Membership in the News



Judy LaJoie, RN,
CDE, DAPWCA

APWCA poster abstract coordinator and Medical Advisory Board Member, Judy LaJoie, RN, CDE, DAPWCA recently published a children's book about diabetes entitled, "Mom Says I'm Sweet. I Have Diabetes". New York Times Best-Selling author, Ellen Tanner Marsh describes it as, "...honest, straightforward and compassionate". The book is written from a child's perspective and is very creative and well done!



Interested in picking up the book for pediatric patients or recommending it? Contact BookSurge, LLC at www.booksurge.com or call 1(866)308-6235 or email orders@booksurge.com.

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APWCA Western District Conference Held December 3rd and 4th in Los Angeles, CA at the LAX Sheraton Four Points Hotel



Our Western District Conference was a success with a total attendance of fifty. Reviews and evaluations were positive and the seminar encouraged some new membership as well. Several from out of the LA area requested similar meetings in their area and indicated they would start ground work to initiate anything from a dinner meeting to a more formal one or two day

conference. "Best wound care conference any where!" was a frequent comment made regarding the quality of our national conference. These members are planning on returning to Philadelphia again for 2006! Thanks to Dr. Randy Fish, First Delegate, Western District, APWCA and other APWCA members for assisting with registration and organization.

FEATURED ARTICLE (Continued from cover)

Silver Resistance: A Brief Review

nanocrystalline silver, which are known to potentially release high levels of metallic silver or silver ions, may be deleterious to wound healing (The use of silver coated dressings on donor site wounds: a prospective, controlled matched pair study. Innes M, Umraw N, Fish J, Gomez M, Carlotto R. *Burns*, 27, (2001), 621-627).

More recently, there has been additional debate around the quantification of the true level of *ionic* silver that may exist realistically in a physiological environment. There is general agreement that it is not the amount of metallic silver (Ag 0) in the wound environment that is significant from an antimicrobial point of view. What seems to matter in the wound environment is the concentration of the *ionic* Ag + species, which is the true antimicrobial agent in any silver based dressing.

For example, a recent paper suggests that while nanocrystalline silver based products may indeed show a comparatively high concentration of silver ions in an elution medium such as distilled water, such products do not demonstrate these high concentrations of silver ions in elution medium that is *physiologically more relevant* (Silver deposition and tissue staining associated with wound dressings containing silver. Walker M, Cochrane C, Bowler P, Parsons D. *OstomyWound Management*, 52, Issue 1, (2006), 42-50). The researchers in this study did not find any difference in the silver ion elution levels between dressings that are nanocrystalline silver based and dressings that are based on another silver releasing technology that is associated with a greater controlled release nature of the associated silver ion. In explaining this, the authors suggest that in an environment containing high concentrations of chloride ions, as would be typical in a physiological environment, the level of silver ions from any dressing will be limited by the solubility parameters of the nearly insoluble and instantly formed silver chloride. The authors also demonstrate that nanocrystalline silver based dressings may deposit metallic silver on skin, causing staining. The wound healing implications in the scenario where such silver particles enter an open wound needs to be further investigated.

In view of the possibility that high levels of metallic silver deposition in the wound bed may slow down wound healing, one needs to then examine whether alternative technologies that avoid such metallic silver deposition are more useful to the clinician, and whether these other, more controlled release silver/silver ion technologies have any associated risks of encouraging silver resistance. These alternative products, for example, may include those based on metallic silver, silver carboxymethylcellulose, silver chloride, or silver zirconium phosphate as the silver ion releasing species.

In reality, though laboratory efforts have succeeded in creating silver resistant species, there seems to be little clinical relevance to this type of work, according

to the authors of a paper who exhaustively reviewed clinical and laboratory publications on the subject. (Bacterial resistance to silver in wound care, Percival S, Bowler P, Russell D. *Journal of Hospital Infection* 60 (2005) 1-7).

These authors credibly point out that pathogens have been exposed to sub-inhibitory levels of Ag+ in the environment over four billion years and no widespread resistance has been evident to date, where as widespread antibiotic resistance has developed over the last 60 years. The authors conclude that there are major differences in the mechanism of development of resistance to antibiotics (where clinically observed drug resistance is a fact) and to silver (where clinically observed resistance is a fiction). These differences in mechanism are of course related to the differences in the "mechanism of lethality" of the two agents in question. Antibiotic lethality arises out of very sensitive and specific mechanisms, which are easily blocked by a limited number of mutations. Silver lethality is much more non-specific and there are several pathways of toxicity, making it far fetched, if not impossible, that clinically significant silver resistance will arise. Other researchers in this area have also found that silver resistance is not a stable mutation and the resistance is quickly lost upon propagation. Microbiological examination of pathogens cultured from chronic wounds that have been treated with controlled release silver ion products seem to bear out the hypothesis that silver resistance is not found easily in the clinic. (Does the Long-Term Use of a Silver Gel Result in Silver-Resistant Organisms in Clinical Practice? Serena T, Serena C, Beuger C, Poster Presentation, Symposium on Advanced Wound Care, Las Vegas, NV, 2005).

In conclusion, it is possible that wound healing outcomes may be negatively affected by high levels of metallic silver or silver ions present in a wound. Effective antimicrobial efficacy may be achieved by controlled quantities of the silver ion, which is a potent antimicrobial, even in low concentrations. The debate will continue on whether super-high levels of silver, as are typically claimed to be delivered by nanocrystalline silver technology, are appropriate for delicate healing tissue. It is also likely that further studies will show that it makes little sense to jeopardize the speed of wound healing by using dressings heavily laden with silver, in the assumption that widespread silver resistant mutant strains are about to emerge from the use of products that deliver more controlled quantities of silver into the wound site. In fact, it begins to appear from very recent studies that though some dressings may contain and release high levels of metallic silver, all silver containing dressings actually achieve the same silver ion concentration in a wound bed due to the chloride rich nature of the wound environment. In that scenario, it is clearly beneficial to use silver based products that do not harm skin, and that have intrinsically lower tendency to deposit metallic silver in the wound environment.

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