



the JOURNAL

of the Pennsylvania Osteopathic Medical Association

December 2017

Professional Organizations...



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Place in the
Future World of
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PRIMARY CARE CONFERENCE 2018

Peek'n Peak Resort, Clymer, NY • March 1-4

Presented By: L|E|C|O|M HEALTH

Conference Information

Primary Care 2018 offers a unique learning experience for physicians and health care professionals seeking to learn the latest information about medical advancements and treatment options. LECOM faculty and guest lecturers will present topics pertinent to primary care physicians as well as specialists.

The conference will focus upon health problems commonly seen in the offices of primary care physicians. Topics for this year's conference will include two hours of opioid training; pain management, the identification of addiction and the practice of prescribing or dispensing of opioids. Along with clinical lectures, topics presented will be related to women's health, sports medicine, gastroenterology and much more! Primary Care 2018 will also devote up to five hours to the mandated patient safety and risk management requirements.

Pre-Conference Workshop

The Lake Erie Integrated Geriatric Health Team (LIGHT) is supported by a \$2.2 million Geriatric Workforce Enhancement Program (GWEP) grant which supports the development of a health care workforce that improves health outcomes for older adults by integrating geriatrics with primary care, maximizing patient and family engagement, and transforming the health care system.

This pre-conference workshop will consist of continuing education sessions for all levels of licensed health care professionals and will prepare them for certification in geriatrics through the certifying body for each discipline. The workshop will be held on Thursday, March 1 from 12-5pm.

Fees and Credit Hours

Physician Registration - Up to 20 Credit Hours: \$375.00
Allied Health Professionals - Up to 20 Credit hours - \$250.00
Students, Residents, Interns - Up to 20 Credit Hours - \$150.00*
Thursday Pre-Conference Workshop - Up to 5 Credit Hours: \$100.00**

Conference Schedule

Thursday, March 1: 12:00pm-5:00pm
Friday, March 2: 7:00am-5:30pm
Saturday, March 3: 8:00am-5:30pm
Sunday, March 4: 7:00am-11:00am

**Students must be current medical, pharmacy or dental students.*

***The Thursday Pre-Conference Workshop is an add-on and is not included in the Physician or Allied Health Professional registration.*

Register Online at LECOM.edu/CME

Early-bird registration ends February 1, 2018



THE

Journal OF THE PENNSYLVANIA OSTEOPATHIC MEDICAL ASSOCIATION

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FROM THE EDITOR'S DESK

Mark B. Abraham, DO, JD



*Mark B. Abraham, DO, JD
Editor-in-Chief*

As we continue to move forward with improving POMA, I wanted this issue to concern the role of professional organizations; be they POMA, the AOA, specialty colleges or other organizations; and the future of medicine. Many of you may be aware of recent considerations to consolidate organizations — the premise being the question of whether or not they help us. There are also considerations as we continue to move forward with further integrating residencies between osteopathic and allopathic physicians.

I do feel that there is a role for various organizations, especially state organizations such as POMA. The organizations allow for various ways of determining needs of its members and then acting as a collective voice. Sometimes that means legislative advocacy. National organizations may be able to do that at the federal level, but the state organizations cover the state laws and regulations which tend to affect individual practitioners the most whether it is licensure, malpractice or criminal issues just to name a few. I also recognize that there will be times when the different organizations may simply overlap. When that happens, there is a risk of losing membership. As practitioners, there are only so many dollars we can or will allocate to various organizations. Why join many which overlap in what they do?

There are also moments when specific needs or goals may conflict with an association's purpose. As an example, many medical schools, including LECOM and PCOM, offer programs other than osteopathic medicine. The colleges have an obligation to all students, be they pharmacy, physician assistant, psychology or any other program. Advocacy for these other groups may conflict with the need to support physicians. How will various orga-

nizations represent all interests? There may be many of us opposed to expanded roles with less direct supervision for mid-level providers or prescribing powers for pharmacists while others may value some expanded roles due to our own practice needs.

As you read this issue, you will have the opportunity to read multiple perspectives and thoughts on the role of organizations as we advance in medicine. Maybe you will concur with what you read, perhaps disagree or maybe have a suggestion. If so, please respond.

We have received some feedback from the Opioid issue this fall. I thank Drs. Simonelli and Sesso for sharing their thoughts. These Letters to the Editor express concerns and beliefs which I know many practitioners share. If these opinions stimulate you to provide your own thoughts, please do.

Our next issue will concern why we enjoy medicine. I know the common medical school interview question as to why one wants to be a doctor is "to help people." One of my undergraduate, fraternity brothers ultimately went into emergency medicine for the stories he could tell. He enjoyed the various situations which he encountered as a medical student and wanted to continue to have those experiences. Why did you go into practice? Choose your specialty? Continue to practice instead of retire? Leave clinical medicine for another path? We would love to have your input, stories and reasons. Medical students and residents, please also share your thoughts. There was much more to your answer of helping people (interviewers usually press for more with that initial response).

I hope you enjoy holiday season.

Collegially,

Mark B. Abraham, D.O., J.D.

LETTERS TO THE EDITOR

October 25, 2017

Dear Editor,

It was with sadness and disappointment that I read the September 2017 issue of *The Journal of the Pennsylvania Osteopathic Medical Association*, A Look at Pain and the Opioid Epidemic in Pennsylvania. I am saddened by the changes that I have seen occur in the management of pain since I began to have patient interactions as an orderly during and after college, throughout medical school, internship, and residency, and, finally during active practice. No health care professional wants a patient to suffer in pain, by it appears that the most modern approach is to throw narcotic medication at the pain indiscriminately.

I recall pain management during my earliest days in health care when patients received injections of Demerol and Vistaril every four hours. Today, one milligram of morphine by PCA every six minutes is not sufficient. During my residency, a patient recovering from a carpal tunnel release received a prescription for 10 Tylenol #3 postoperatively, whereas, today, a patient seen in the emergency room for a bruise goes home with a prescription for 60 Percocet tablets, or a patient with pain from an arthritic joint is inappropriately treated with long term narcotics.

Somewhere along the way, pain became the fourth vital sign, to be eliminated entirely. New nurses graduated and began working on postsurgical units, having learned the unrealistic expectation that the only acceptable pain level is zero. Numbers and smiley faces were quick to be employed, but, perhaps the nurses became too overworked to use other compassionate measures of pain control, such as patient distraction. I have had night nurses call three separate physicians to achieve a zero pain level by increasing the dose of PCA morphine in an elderly postoperative patient, whom I found in ICU the following morning following her respiratory arrest. Professionals and regulators became more concerned about the acetaminophen in an analgesic tablet than about the narcotic itself. Empowered patients threatened to sue if they did not receive "enough" pain medication. People two or three months following surgery insisted that their pain was just as bad as it was the day after surgery. Government regulation and benchmarks, patient satisfaction evaluation pressure, and the physicians' loss of autonomy also play a role.

Patients and health care professionals need to be reeducated, and physicians need to retake control of medicine.

Sincerely,

Paul M. Simonelli, DO, FAOAO
Lancaster, Pennsylvania

November 15, 2017

Dear Editor,

I was a critical care physician for 35 years and am an addiction detox physician for the last eight years.

I am annoyed at the politics that has entered the opiate use dilemma.

From 1996-2006, it was the government (CMS) and bureaucratic agencies (JCAHO) that pressured physicians to prescribe opiates more freely to abolish pain. We were subject to reviews and ratings by our staff due to government criteria.

I worked closely with about 25 doctors on a daily basis and I can inform the readers that we were not pressured by pharmaceutical companies. It was common sense to know that sales reps were skilled at marketing and that we should be scientific in our evaluations of any medicine.

We need primary care doctors, addiction physicians and pain specialists to guide politicians, not the reverse.

Faternally,

Donald J. Sesso, Sr., DO
Gwynedd Valley, Pennsylvania

LECOM DEAN'S CORNER

Lake Erie College of Osteopathic Medicine

The Fight for the Future — Osteopathic Medicine will Stand Firm with Organizational Partners that Bolster the Profession



*Silvia M. Ferretti, DO
LECOM Provost,
Vice President and
Dean of Academic Affairs*

With the hopeful optimism of all that embodies whole body medicine and osteopathic health, we at the Lake Erie College of Osteopathic Medicine (LECOM) welcome the new year as an inspiration to affirm our commitment to preserve, defend, and advance osteopathic medicine and all that the profession embodies.

With this noble theme at the fore, the role of medical schools that work in partnership with professional associations shape the future of our estimable profession. Medical schools such as LECOM work closely with affiliate organizations such as POMA, AOA, ACOFP, ACOI and other interprofessional organizations such as PAMED, PSNA and the PPA to ensure that students understand the superior benefit of practicing in the osteopathic philosophy and holding fast to its superior mission.

LECOM has formed solid and sound alliances with active organizations such as POMA to promote health care steeped in the osteopathic traditions.

Professional organizations play a key role in the advancement of health care and in the training of health care professionals. Coordination among medical schools and professional organizations involves students in every step of their educational journey as they look ahead to their important role in the profession.

The physicians who work throughout the LECOM nexus are members of these associations; LECOM students participate in educational programs and conferences provided by the associations; and there is a palpable synergy as LECOM physicians serve on association committees.

Indeed, the professional associations are inextricably linked to the advancement of the profession.

Perhaps equally important to facilitating and advancing the growth of the profession is the fact that osteopathic educational institutions, such as LECOM, constructively constitute the pipeline of physicians that flows in abundance into the organizations of which we write.

As LECOM trains students to become competent, first-rate practicing physicians and as they participate in residence programs, such students are drawing ever closer to the associations of which they too will be active members.

Marked with pride, the Annual White Coat Ceremony, at which organizations such as POMA and the POMA Foundation stand shoulder-to-shoulder with LECOM to present the white coat and stethoscope to transitioning students, the event highlights just one of many LECOM-association related and collaborative undertakings. Buoyed by such organizational partners, LECOM students enter their clinical rotations prepared to work collaboratively.

Millcreek Community Hospital, (the teaching hospital of LECOM), the LECOM physicians' offices, and the many sites affiliated with the vast network that is LECOM Health foster the collaborative spirit. Such interprofessional education and collaboration can be highlighted across the LECOM platforms.

Student clubs and associations meet interprofessionally, attending meetings, national conferences, legislative events and facilitating seminars that advance the osteopathic mission.

Organizations, such as the Pennsylvania Osteopathic Family Physicians Society (POFPS), helmed by LECOM Regional Dean Dr. Richard Ortoski (President), welcomes guests and venerable lecturers to gather and to speak about topics central to the osteopathic profession.

From the recruitment of students to the awarding of scholarships, those committed to the advancement of osteopathic medicine always have maintained a clear vision of the osteopathic future.

Without doubt, interprofessional collaboration is an ingrained theme, carried further into the very practice of medicine; and it is especially important in the care of patients. In the practice of medicine, health care providers from different professional backgrounds work together with patients, families, caregivers and communities so as to deliver the highest possible quality of care.

(continued on page 23)

PCOM DEAN'S CORNER

Philadelphia College of Osteopathic Medicine

A large part of educating medical students is seeing into the future — we have to anticipate the changing health care delivery system yet to come, and match our educational goals accordingly. We have to take the knowledge we have now and extrapolate that out — and what we're finding is that a team-based approach to health care is the only way forward.

The days of the doctor as the sole practitioner are over, especially as the population of older Americans continues to increase and live longer — many with chronic conditions that will need to be monitored continuously — and as payment models are shifting from a fee-for-service model, to an outcomes model. These new models encourage efficiency in patient care, and much of that is done via a team-based approach: all health care professionals working together to ensure complete continuity of care.

At PCOM, we've been modeling this for several years in our community-based Health-care Centers. Psychology students have long rotated through our clinics right alongside our DO students, underscoring not only our commitment to the mind-body-spirit connection, but also to the idea that improved health outcomes happen not in the body, but in the mind. How can a physician expect a patient to lose weight, if he or she has to first undo a lifetime of bad behaviors? That behavioral change is key to lasting positive change, and it can be achieved with the folding of psychology into the primary care setting.

More recently, the College has embarked on several interprofessional education (IPE)

seminars, which allows all our students from across disciplines to learn from each other by working side-by-side. PCOM is uniquely positioned to offer IPE; programs from across the health care spectrum—from DOs to physician assistants to psychologists to pharmacists—are housed under one roof.

IPE occurs when two or more students from different disciplines learn about, from and with each other to improve patient outcomes. In required monthly, three-hour courses, students come together to discuss a specific problem, and learn how to work collaboratively to address it.

IPE has grown significantly at PCOM since it started just a year and a half ago. The student size has more than tripled, to 157 students per session, and two participating psychology students are basing their dissertations around the program. In the first year of the program, the majority of students said they found the sessions somewhat or very helpful. In the coming years, we hope to expand the program to include more faculty and students across disciplines, and further hone our evaluation process when determining student success.

Interprofessional training is the best way to prepare our students to be competitive in a collaborative workforce, and that collaboration provides better patient outcomes. It's a win-win. Our IPE sessions are the first steps we're taking to ensure our students are successful health practitioners, but they won't be the last.

Fraternally,

Kenneth J. Veit, D.O.



*Kenneth J. Veit, DO
PCOM Provost, Senior Vice
President for Academic
Affairs and Dean*

A STUDENT'S VOICE — PCOM

Elisa Giusto, OMS-IV and Olivia Hurwitz, OMS-IV



Elisa Giusto
PCOM OMS-IV



Olivia Hurwitz
PCOM OMS-IV

Way back in the beginning of first year, at a ceremony in front of our families, friends, and newfound colleagues, we were handed what we probably considered to be the two items essential for every doctor-to-be: a stethoscope and a white coat. Both were emblazoned with four letters, the initials of the organization that had donated both to us, and which we were now officially a part of: POMA.

This was the first experience many of us had belonging to a professional medical association, and unfortunately, the significance of this was probably lost on most students. While a few students chose to get involved in student governments and attend networking events and lectures sponsored by POMA and other professional organizations, most of us became sucked into the endless cycle of lectures, readings, exams and evaluations. The nature of medical school lends itself more towards an isolating focus on passing the next exam than a drive to expand our horizons and check out what state and national associations have to offer us. It's easy for us to get lost in our books, our own goals and our progress, and forget that, ultimately, medicine is primarily collaborative.

As we move through rotations and now interviews at different hospitals across Pennsylvania and beyond, the value of making connections with other students and physicians is becoming more clear. "Networking" and joining professional organizations seems to have accrued a negative connotation among students; it is seen more as a chore, something you have to do in order to schmooze your way into the residency you want. But the utility of these connections goes far beyond self-interest. Professional organizations often house educational events—unknownst to most students. POMA, for example, offers lecture

dinners where students and physicians gather to listen to a presentation on various medical issues or medications. This not only gives students the chance to socialize with their current and future colleagues over a delicious meal, but also exposes them to new ideas and issues in medicine. Even simple "networking" events that don't include lectures might open up opportunities for rotations, conferences and other activities to expand students' educational experiences while in medical school. This can, in turn, end up being beneficial to patients down the line.

The emphasis of medical school (at least in most students' minds, if not in the administrations') seems to have shifted from getting a well-rounded clinical education to two shortsighted, though obviously important, goals: acing boards and getting a "competitive" residency. Students deserve better than this — and so do patients.

Unfortunately, many students will probably not seek out these experiences on their own, so the challenge can be put to medical school administrations and the professional organizations themselves: start collaboration early! Make yourselves and all you offer known to the students. More students becoming actively involved in state- or nationwide organizations means more physicians actively involved in those organizations in the future. With more participation come more shared ideas and perspectives, more education and solutions, and, ultimately, better health care.

POMA and organizations like it are already offering so many amazing opportunities and services to students, which can serve to pull them out of the world of textbooks and exams, and provide them a diverse medical education that will benefit their patients in the long-run, if only students would take more advantage of it.

IN THE YEAR 2525...

I have found this assignment to be quite difficult. There is a fine line between reporting, projecting and protecting. If you are a reader of this column you are aware that I enjoy historical perspectives. It appears obvious to me that the future is difficult to understand without adequate knowledge of the past. Allow me to put things in a perspective that may be beneficial.

Approximately 25 years ago or so I attended my first POMA house of delegates. Being new to the situation, I asked a classmate and colleague questions about the procedures, expectations, preparation and the like. I was greeted with a non-answer. At that moment it became clear to me that if I were to become part of the POMA and AOA, I needed to learn things on my own. With that in mind, I questioned past presidents of the POMA and made contact with people working with the AOA. It was time consuming and not always welcomed. Eventually, trust and fellowship developed and I felt better prepared. Unfortunately, in the process of learning, disclosures were made that I find to be troubling. To better understand where we as a profession stand today and where we may be headed in the future, I would like to review the last dozen years or so with you.

In or around 2006, the Federation of State Medical Boards (FSMB) and the National Board of Medical Education (NBME) convened a meeting that has become known as the Litchfield 7. Attending the meeting were the presidents or executive directors of the American Board of Medical Specialties (ABMS), the Accreditation Council for Graduate Medical Education (ACGME), the Liaison Committee on Medical Education (LCME), the Association of American Medical Colleges (AAMC), and the Center for Medical Education (CCME). All seven being allopathic organizations. The meeting took place in Litchfield, Connecticut at the home of the head of the FSMB. Topic: What to do about the AOA.

Previously, the FSMB conducted a series of meetings that included the AOA, the National Board of Osteopathic Medical Examiners (NBOME), and the American Association of Colleges of Osteopathic Medicine (AACOM). The reported topic was the future of orga-

nized medicine and how the organizations interacted. The hidden agenda was that our residencies and certifying boards had to be eliminated and our physicians would be integrated into the AMA. Obviously, this was rejected. Notably, we received support from Regina Benjamin, MD, who later became the U.S. Surgeon General. Having failed to have the AOA capitulate, the Litchfield 7 held their meeting.

The ultimate crown of thorns was placed on the brow of the AOA sometime in 2011-12, when the ACGME announced they would not accept our DO graduates into fellowships, etc., unless they successfully completed one of their approved programs.

Did the POMA have this knowledge? That depends on your view point. The executive committee, the board, etc., did not. Since these occurrences were discussed at the AOA board of trustees, I have only questions, not answers.

Currently, we have initiated a unified graduate medical education program and maintenance of licensure and maintenance of certification programs all endorsed by the FSMB. Remember, the FSMB has been in existence for over 100 years. Its ultimate goal is to be the sole authority for physician licensure for the US and its territories. The remaining Osteopathic Boards stand in their way. I am fearful that in the future, the unification of residency and fellowship programs may blur our distinctiveness, resulting in the loss of our separate and distinct licensing board. However, the future is still unwritten and I choose to remain hopeful.

Pennsylvania is in a position to lead on a national level. It seems we are confronted with two choices: "Go along to get along," or stand tall and be a force for unity and change. This cannot be done in isolation. Bridges must be built with our colleagues nationally. There needs to be a sense of urgency. Our leadership has recently focused on revamping our state association, but this must not be in lieu of establishing mutually beneficial alliances at the national level.

Easy? No. Necessary? Yes. OR, we can just "go along to get along."

Uncomfortable? Me too. Remember: "We have met the enemy and he is us." — Walt Kelly



Samuel J. Garloff, DO

ABOUT THE AUTHORS



Jordan R. Bonier, DO



Jonathan J. Callegari, DO



Amy L. Davis, DO



Diana M. Ewert, MPA, CAE

Jordan R. Bonier, DO, received an honorable mention award in the 2017 POMA Clinical Writing Contest for his article, *"Post-operative Surgical Site Infection Rates in Orthopedic Procedures Before and After Use of Silver-impregnated Occlusive Dressing in a Community Hospital Site."*

A fourth-year orthopedic surgery resident at Millcreek Community Hospital in Erie, Pennsylvania, he is a 2014 graduate of the Lake Erie College of Osteopathic Medicine at Seton Hill in Greensburg, Pennsylvania. Originally from Hermitage, Pennsylvania, Dr. Bonier is interested in adult reconstruction and plans to apply for fellowship training.

Jonathan J. Callegari, DO, received the third place award in the 2017 POMA Clinical Writing Contest for his article, *"A Retrospective Analysis of the Possible Cardiac Complications Associated with the Use of Tranexamic Acid on Patients Who Have Underlying Cardiac Disease and Have Undergone Total Joint Replacement."*

A third-year orthopedic surgery resident at Millcreek Community Hospital in Erie, Pennsylvania, he is a 2015 graduate of the Lake Erie College of Osteopathic Medicine. A native of Memphis, Tennessee, Dr. Callegari plans to practice orthopedics in the south once his training is complete.

Amy L. Davis, DO, MS, FACP, FAAHPM, is the author of *"Professional Organizations Help Stem Burnout."* She is a board certified subspecialist in hospice and palliative medicine with a private palliative care practice in the Philadelphia area. She is also a clinical assistant professor at Drexel University School of

Medicine. Dr. Davis graduated from the Philadelphia College of Osteopathic Medicine with DO and Master of Science (Neuroanatomy) degrees. She completed an internship at the University of Medicine and Dentistry of New Jersey — School of Osteopathic Medicine/Kennedy Health System, an internal medicine residency at Pennsylvania Hospital and a palliative medicine fellowship at the Mount Sinai Medical Center in New York. A fellow of the American College of Physicians and the American Academy of Hospice and Palliative Medicine, Dr. Davis serves on several national and regional committees of organizations focused on improving and providing quality medical care and on substance abuse in the setting of serious illness.

Diana M. Ewert, MPA, CAE, is the author of *"Physician Centric Care: POMA Works for DOs."* Ms. Ewert is the chief executive officer of the Pennsylvania Osteopathic Medical Association (POMA), the POMA Foundation and executive director of the Pennsylvania Osteopathic Family Physicians Society. A graduate of the University of Missouri — Kansas City, she holds a bachelor's degree in liberal arts and master's degree in public administration with nonprofit management emphasis. She earned the designation of Certified Association Executive in 1999. Ms. Ewert previously served as the Vice President of Affiliate Affairs for the American Osteopathic Association, senior manager of state government relations for the American Academy of Family Physicians, and executive director of the Missouri Academy of Family Physicians.

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Guest Column

Physician Centric Care: POMA Works for DOs

What does POMA do for me? A new physician in practice? An employed physician? A physician in solo or group practice? A resident? A student? A retiree? What is the relational value between osteopathic and soon-to-be osteopathic physicians and this professional organization? These are questions worth asking and answering.

Staff can make some educated guesses based on the current practice environment but even our best guesses may fall short of the desired state for your professional association. POMA has been working with Association Laboratory, Inc. to conduct comprehensive research to review current programs, products and services to seek the answer to what programs, products and services you desire, require and deserve. We hope that you responded to the membership value survey that was sent to osteopathic physicians in Pennsylvania, members and non-members, just prior to Thanksgiving. The analysis will provide POMA needed data and position POMA leaders to make evidence-based decisions on how best to support not only our members, but the osteopathic profession as a whole. This is necessary as we move closer to a single accreditation system (SAS) for post-graduate medical education in June 2020.

The SAS (which combines AOA and ACGME post-graduate education) presents significant challenges as well as unique opportunities for POMA. One challenge is fear. Questions being asked by the profession include, "Is 2020 the beginning of the end for osteopathic medicine?" "Will continuing medical education that is distinctively osteopathic still be needed?" "Will osteopathic students completing ACGME residencies prefer to be osteopathically board certified?" Osteopathic state and specialty associations are positioned to assuage the fears, answer the questions and meet the

needs of the osteopathic community. We see medical students actively seeking osteopathic education because the philosophy resonates. The constructs of empathy, engagement, understanding and seeing the person within the patient have significant appeal in the coming generation of physicians. This is exciting! This is an opportunity! This is why there will be a professional home for osteopathic physicians in Pennsylvania today, tomorrow, and well beyond 2020. POMA needs to continuously scan the practice environment and adapt accordingly in order to remain relevant.

As early adopters of the patient-centered medical home model, the osteopathic profession and its training institutions, have embraced the concept of team-centric care. The health care team is dynamic and multicultural in that the composition includes non-physician clinicians (such as physician assistants and pharmacists). The physician, however, is the leader of the team, as physicians having the highest level of training, education, experience and expertise among the team members. It is not surprising that colleges of osteopathic medicine have embraced this model by creating interdisciplinary educational and training programs for non-physician clinicians. This being said, the role of POMA continues to be representing the interests of our respective professions to regulatory and legislative bodies. POMA can ensure that continuing education for osteopathic physicians is relevant and improves patient outcomes. When we agree on issues collectively as health care groups, we can collaborate effectively to represent patient interests; and when we do not agree, we can respectfully disagree operating as individual associations working in the best interests of patients, our respective members and our professions.

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Guest Column

Professional Organizations Help Stem Burnout

*by Amy L.
Davis, DO*

Our health care system, and the culture surrounding it, has changed tremendously over the last 20 years. Some transformations have been good. For example, hospital systems are now more willing to invest in services that help prevent readmissions, which often improves people's health and their quality of living. Others have negatively impacted the relationships among patients and their health care teams, the role of clinicians, and the very paradigm through which we define good medical care. As our health care system continues to evolve, clinicians are expected to adjust ever faster, while still focusing on patients' needs, the latest research, expanding administrative expectations, their own interpersonal relationships and self-care. Some of these shifts are causing, or at least worsening, the progressive trend of physicians and others in clinical medicine to experience compassion fatigue and burnout. The 2015 Mayo Clinic study showed that 54 percent of physicians surveyed had at least one symptom, up from 45 percent just three years before, with an odds ratio of 1.97 compared with the general population.¹ The etiologies of compassion fatigue and burnout are complex, but a loss of autonomy, feeling a lack of meaning in one's work, inefficiency, excessive workload, unprocessed grief, a fear of stigma, and an unsupportive environment are prominent contributors.²⁻⁴ These issues are causing too many to experience poorer quality of life and health issues and to decide to retire earlier than planned and/or leave clinical medicine.⁵

While their foci and styles vary, professional organizations have begun the work necessary to resolve compassion fatigue and burnout and the issues that cause them. Becoming active in a professional organization that shares one's goals enhances professional meaning. Advocacy efforts, often combined with other groups having similar goals and interests, have directly improved CMS and other insurance program requirements and implementations, federal and state legislation pertaining to

medical issues, and even medical system and insurance company issues that were negatively impacting regional medical care. Joining together builds power and provides meaningful professional autonomy to propel positive change. Associations also contribute diverse education through multimodality mechanisms designed to maximize efficient adult learning. In addition to furnishing members with the advocacy tools and skills they need to have the biggest impact, organizations formulate professional guidelines, offer opportunities to update clinical skills and knowledge, and publish peer-reviewed research; provide tools and guidance on streamlining administrative tasks, time management, practice and system improvement, and medical-business negotiations; and teach and nurture leadership skills, networking, mentorship, and sponsorship in a safe environment. For most of us, gone are the mythical days of relaxing clinician dining rooms and break lounges; our work environments now stress productivity and minimize socialization and downtime. Organizations create opportunities for socialization among peers and their families. This fosters a larger foundational network, stronger interpersonal relationships, and often a more supportive workplace environment. Professional groups are also directly encouraging system-wide action to eliminate compassion fatigue and burnout. Published vigorous research and articles with evidence-based recommendations are becoming commonplace, both in the medical and business literature. Associations are sponsoring workshops and other educational activities for clinicians, administrators and health care executives. Peer groups, outreach and private support are also more prevalent, and clinicians have begun to more openly share the human side of practicing medicine.

Our health care system will continue to be transformed, and evolutionary changes will occur. Professional organizations allow us a vehicle for strengthening the positive changes,

(continued on page 24)

Medical Update

A Retrospective Analysis of the Possible Cardiac Complications Associated with the Use of Tranexamic Acid on Patients Who Have Underlying Cardiac Disease and Have Undergone Total Joint Replacement

Introduction

Tranexamic acid (TXA) is an anti-fibrinolytic medication used to stop bleeding in various circumstances, most importantly during major surgery. Its significance to prevent major complications of bleeding has been well established in various surgical scenarios, such as cardiac surgery, dental surgery and orthopedic surgery.

The use of TXA in coronary artery bypass grafting has significantly reduced the need for postoperative blood transfusions.¹ The anti-fibrinolytic properties of TXA have been shown to decrease perioperative blood losses in cardiac surgeries. Despite the well-documented benefits of the use of TXA in cardiac surgery, the possibility of thromboembolic postoperative complications have not been extensively investigated.

The use of TXA has spread to other major surgical fields as well. Its use in major orthopedic surgical procedures has become more widespread. Orthopedic total joint surgeries are among the most common operative procedures performed and associated with major losses of blood and subsequent allogeneic blood transfusions.

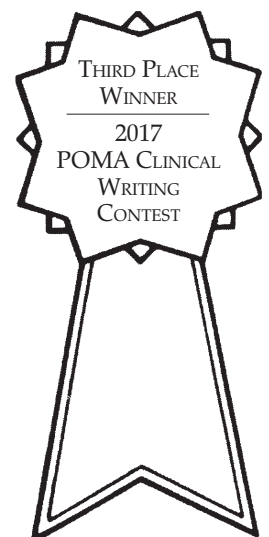
TXA has been shown to decrease the need of for allogeneic blood transfusions during total knee and total hip arthroplasty, as well as the number of units transfused.^{2,3} Blood loss and blood transfusions are associated

with life-threatening complications, including transmissible blood-borne disease, immune-mediated lung injury and hemolytic reactions. They are also associated with increased length of hospital stays and increased costs. Any medication that can mitigate blood loss and reduce the need for blood transfusions and their associated complications should provide a mortality benefit to the surgical patient. TXA is a medication that is proposed to achieve this purpose, although its safety profile is not well established.

TXA's anti-fibrinolytic property is achieved by disrupting the normal binding of plasmin to fibrin. In the clotting cascade, plasminogen is activated to plasmin by several enzymes including tissue plasminogen activator, urokinase plasminogen activator, Hageman factor (factor XII), and kallikrein. Terminal lysine residues on fibrin then bind to lysine binding sites on activated plasmin. TXA is a lysine mimetic that binds to the lysine binding site on plasmin and prevents the physiologic binding of fibrin to plasmin. This thereby interrupts fibrinolysis by disabling the ability of plasmin to bind to fibrin and lyse clots.⁴

TXA's pharmacological properties are also associated with several known side effects including GI (nausea, vomiting, and diarrhea), paresthesias, vertigo, headaches, myalgia, arthralgia, sinusitis, hypotension, anaphylactic shock, dyspnea and increased risk of throm-

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boembolic events. Despite these risks, the use of TXA has become common practice in many surgical specialties and various trauma settings.

Studies have shown that TXA is a medication that, given prophylactically, reduces blood loss and complications from major orthopedic surgeries. Total joint replacements result in activation of the fibrinolytic system both through the use of a tourniquet and soft tissue injury during surgery. This fibrinolytic response leads to an increase in peri- and postoperative blood losses. TXA's anti-fibrinolytic effect is thought to lead to lower blood losses after surgery.

Many studies have shown that TXA is effective in reducing postoperative blood losses and complications, including deep vein thrombosis (DVT)/pulmonary embolism (PE), myocardial infarction (MI) and stroke. However, its effects have not been extensively studied in patients who have a history of cardiac disease. Some studies have also shown that TXA may increase the risk of postoperative thromboembolic complications after total joint replacements.⁵ Prior studies have not isolated patients with previous cardiac histories. If thromboembolic complications have been associated with the use of TXA in patients without cardiac comorbidities then the risk of these complications in patients with prior cardiac histories should increase.

Atherosclerotic heart disease creates a prothrombotic state in the body. Patients who have undergone prior mechanical valve replacements and other major cardiac surgeries have an increased rate of thromboembolic complications. Based on its pharmacologic action, TXA has the potential to promote clot formation and lead to an increased risk of thrombotic events in patients with a history of cardiac disease. The increased risk of thrombotic events in patients with cardiovascular disease has been well documented in the past.

Atherosclerotic plaques are prone to erosion and rupture from turbulent blood flow resulting in platelet mediated thrombus formation and possible embolization and ischemic necrosis of tissues.⁶ TXA's ability to inhibit physiologic fibrinolysis would decrease the body's ability to lyse thrombi and therefore in patients with preexisting cardiovascular disease likely increase the probability of thromboembolic complications. Cardiovascular disease in patients undergoing major surgical procedures could therefore affect the surgeon's decision to use tranexamic acid.

Mandal et al⁷ presented a case report in which a patient with GI bleeding given TXA

developed an MI. The aim of this study is to establish whether there is an increased or decreased risk of complications in patients undergoing major orthopedic surgery (total knee or total hip replacement) who have an established history of cardiac disease.

TXA has been used effectively for many years to reduce postoperative bleeding and blood transfusions, including in major orthopedic surgeries. Many studies have established that there are no increased risks of complications from TXA use, including DVT/PE, MI, stroke and renal failure. However, these studies did not look specifically at patients with cardiac histories who were given TXA for orthopedic surgeries. Some studies have demonstrated increased risks in patients given TXA during primary cardiac procedures, but these studies did not specifically examine patients with a history of cardiac disease. This retrospective analysis aims to establish an association with TXA use and risk in patients undergoing knee or hip total joint replacement with a history of cardiac disease.

Ido et al⁸ examined the rate of blood loss in patients undergoing either a total hip or total knee arthroplasty given TXA and found a significant reduction in postoperative blood loss in those given TXA during surgery. No thromboembolic complications were noted in the TXA group. Martin et al⁹ demonstrated an improved but non-significant reduction in units of blood transfused in patients given TXA compared to placebo. There was no statistically significant increase in complications in TXA group, including DVT. Poeran et al¹⁰ demonstrated patients undergoing total hip or knee arthroplasty showed lower rates of allogeneic or autologous blood transfusions and complications, including thromboembolism, acute renal failure and combined complications. Various other studies in both cardiac and non-cardiac studies have also established low thromboembolic complications with TXA use intraoperatively, but very few studies have been performed in the orthopedic literature.

This paper aims to retrospectively examine the current research available and collect data regarding 1,000 patients undergoing a major joint replacement surgery with TXA use intraoperatively and the risk profile in a patient with a preexisting cardiac history.

Methods

Five hundred patients with a history of cardiac disease who were given TXA by any route (IV, oral, or intra-articular) during a total hip or total knee arthroplasty will be studied for

an increased rate of cardiac complications vs. a group of 500 patients without a cardiac history exposed to TXA via any route undergoing a major total knee or hip arthroplasty (control group). The data will be collected within the past five years. A cardiac disease history will be defined as coronary artery disease, congestive heart failure, cardiac conduction abnormality, previous myocardial infarction, unstable angina or valvular disorder. The complications measured will include DVT, PE, MI, congestive heart failure, angina, cardiac arrhythmia or stroke.

Patient information will be collected from two regional hospital systems (Millcreek Community Hospital and Meadville Medical Center) in order to obtain an adequate number of patients necessary for the study. After the data is collected an odds ratio will be calculated and an attempt to identify a dose response relationship will be determined. The time to completion of the study will be within one year; as long as it takes to gather the necessary data. A statistician will be contacted to help interpret the results of the data.

Data

1. 500 patients with a cardiac history who received a major orthopedic surgery (total knee or total hip arthroplasty) given TXA before, during, or after surgery.

2. 500 patients without a cardiac history who received a major orthopedic surgery (total knee or total hip arthroplasty) given TXA before, during, or after surgery.

3. Route of administration of TXA use in all patients collected 12 hours preoperative, perioperative, or up to 12 hours postoperative.

One thousand patients undergoing a total hip or knee arthroplasty performed at two different area hospitals were used for the study. Seven hundred fifty patients in the study were collected from Meadville Medical Center hospital database, and the remaining 250 were from Millcreek Community Hospital database. All data was collected via ICD-9 codes and no patient identifying information was used in the process.

Overall, 713 patients did not have a preexisting cardiac condition, while the remaining 287 did. Appropriate cardiac conditions included: atrial fibrillation, coronary artery disease, congestive heart failure, cardiomyopathy, various valvular abnormalities or history of DVT/PE. The data was then compared to assess whether a cardiac complication occurred postoperatively. Measured cardiac complications included: MI, stroke, angina, atrial fibrillation,

transient ischemic attack, arrhythmia, DVT/PE or congestive heart failure.

After data collection the data was analyzed to calculate an odds ratio and assessed with chi-square analysis and power.

Results

This study examined 1,000 patients who underwent a total hip or total knee arthroplasty and were given TXA during the procedure. The hypothesis was that TXA, being prothrombotic, would lead to increased cardiac risk when given to patients with a previous cardiac history, already being at higher risk for complications vs. the control.

Seven hundred thirteen patients were control (without cardiac risk) and 287 patients had a preexisting cardiac history, being coronary artery disease, atrial fibrillation, a form of cardiomyopathy, previous history of DVT/PE, congestive heart failure, etc. (*see above for the complete list*). Nine in the exposed group (those with a cardiac history) and nine in the control group (those without a cardiac history) experienced a qualifying outcome.

An odds ratio was calculated retrospectively and determined to be 2.532; 95% CI 0.99 – 6.4; p value 0.0513. These values indicate that those with a cardiac history undergoing a total hip arthroplasty or total knee arthroplasty who received TXA during the procedure have a 2.5 increased chance in cardiac risk compared to those who do not have a cardiac history. The result is not statistically significant. Therefore, those with a cardiac risk do not have an increased risk of developing cardiac complications after given TXA during a major orthopedic joint surgery compared to the control.

Discussion

Based on the above collected data, TXA use (in any form) did not result in an increased risk of cardiac complications in those with a preexisting cardiac history who underwent a major orthopedic total joint procedure. Very few patients in the study experienced a cardiac complication postoperatively. A total of 18 patients in the collected data set experienced cardiac complications. Five patients experienced acute congestive heart failure, one patient developed angina, four patients developed various cardiac dysrhythmias, and one patient experienced atrial fibrillation. No study participants from either institution developed a DVT or PE.

The data collected was used to calculate an odds ratio of 2.53. This indicates that with a result greater than one, an increased risk of

cardiac complications is associated with TXA use; however, the result is not statistically significant. This signifies that there is not an overall increased risk of cardiac complications in patients undergoing a major orthopedic joint surgery with a preexisting cardiac history.

There were a few limitations to the data produced during this study. The data was only calculated for the control group and variable group and did not specify risk of complication based on sex, age, race or other medical conditions besides cardiac conditions. While this data set helps to establish the result that there is no increased risk of cardiac complications associated with TXA use, one of the major limitations of the study is the small sample size of 1,000 patients studied between two regional hospitals. The region is known for a high rate of obesity but not necessarily representative of the population size.

TXA use in any form was studied and there was no attempted correlation between complication and different routes of use. If any complication correlation did exist, then one would expect a higher risk profile with a medication that acted systemically (IV or oral route) vs. a local application (topical or intra-articular).

The population was also not representative of an equal sample size of both control and variable groups, skewing the data towards the complication rate of the patients without a preexisting cardiac history and not fully representing those with a cardiac history.

The study did specify the type of prior cardiac history that patients in the variable group had. These various predisposing cardiac comorbidities were all grouped together. The type of prior cardiac history could affect postoperative complications experienced in patients receiving TXA. A study utilizing a larger sample population across a diverse region that compared cardiac risk factors against each other could provide more accurate information in regards to a specific risk factor being associated with an increased risk of postoperative cardiac complications. Patients with a previous cardiac history of MI, stroke, DVT and peripheral vascular disease may have a higher likelihood of experiencing thromboembolic complications from TXA use compared to patients with a previous history of congestive heart failure, valvular disease or arrhythmias.

The cardiac complications that were experienced by the 23 patients in this study may not have necessarily been caused by the administration of TXA intraoperatively. In order to better establish causality a large randomized controlled clinical trial would have to be con-

ducted to better isolate and control possible confounding variables.

None of the patients in this study experienced cardio embolic complications (DVT, PE), which would have been the expected type of complications recorded based on the anti-fibrinolytic properties of TXA. This would further point to the fact that TXA is not associated with higher likelihood of postoperative thrombotic complications.

Previous studies that have examined use of intraoperative TXA in major surgeries have yielded mixed results as mentioned previously, but very few have examined TXA use on patients with previous cardiac comorbidities. The majority of these studies have not shown a correlation between intraoperative TXA and postoperative thrombotic complications. The results of this study, although statistically not significant, further point towards this conclusion.

The use of TXA has become a common practice in major orthopedic surgeries and being able to provide sound data on the safety and efficacy of its use is important for justification of its continued intraoperative use. Future studies can further expand upon the use of TXA in patients with prior cardiac histories, incorporating some of the suggestions mentioned previously, to provide further support for the use of TXA to control postoperative blood loss. Research will need to be conducted at larger institutions with larger sample sizes in order to establish further evidence towards the use of TXA and cardiac complication risk in major orthopedic surgery.

Conclusion

Based on the results of this study, TXA use during a major orthopedic procedure does not result in an increased risk of cardiac complications. TXA use has been used in orthopedic surgery for many years to reduce blood loss and transfusions with their associated complications after a major joint replacement surgery. Although thrombogenic in mechanism of action, no patient in the study experienced a DVT/PE. This is a testament to the safety of the drug in use during major surgery. However, in light of this data, a retrospective study is typically not strong enough to establish a sound risk profile and analysis. In the future larger sample sizes at larger institutions will need to be used in order to quantify data as well as prospective studies that can establish an absolute risk reduction and risk ratios associated with TXA use.

(continued on page 21)

Medical Update

Postoperative Surgical Site Infection Rates in Orthopedic Procedures Before and After Use of Silver-Impregnated Occlusive Dressing in a Community Hospital Setting

Abstract

Surgical site infections (SSIs) are a frequent complication of operative procedures and lead to significant morbidity and mortality. SSIs are a known risk factor for the development of prosthetic joint infections (PJIs), the treatment of which imparts a major financial burden on the health care industry. Measures to prevent SSIs have been focused recently on improved local wound care. The use of silver as an antimicrobial agent has been shown to improve local infection rates and wound healing. The objective of this study was to determine if routine postoperative use of silver-impregnated occlusive dressings affects acute SSI rates for orthopedic procedures in a community hospital setting.

A retrospective chart review of 1,386 orthopedic procedures (total hip arthroplasty [THA], total knee arthroplasty [TKA], hip hemiarthroplasty [HHA], and unicompartmental knee arthroplasty [UKA]) performed over a four year span was compiled. Two groups were determined based on timing of the procedure: a two year period of postoperative standard gauze dressing as standard surgical protocol (n=719) and a two year period of postoperative silver-impregnated occlusive dressing as standard surgical protocol (n=667).

Acute SSI rates were calculated for both groups. The standard gauze dressing group had a higher overall acute SSI rate (1.39 percent) when compared to the silver-impregnated occlusive dressing group (1.20 percent). The most profound reduction in SSI rates was seen in primary TKA (1.72 percent standard gauze vs. 1.11 percent silver). SSI rate increased in

THA (0.48 percent standard gauze vs. 1.02 percent silver). However, all differences in SSI rates observed proved insignificant.

This study demonstrates that silver-impregnated occlusive dressings may be a cost-effective measure to reduce SSI rates in orthopedic procedures, especially in total knee arthroplasty, though larger controlled studies are needed to demonstrate significant outcomes.

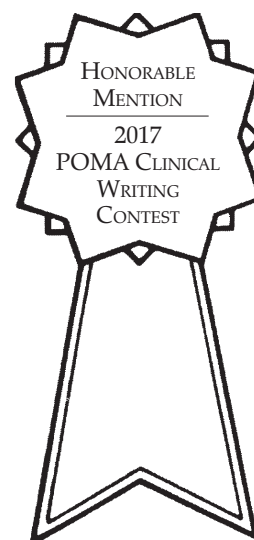
Introduction

Operative procedures make up a large proportion of the United States health care industry, with orthopedic reconstructive hip and knee procedures contributing to a large volume of the overall operations. In acute care hospitals in the United States, an estimated 16 million operative procedures were performed in 2010, and in 2011, approximately 645,000 total knee replacements, 307,000 total hip replacements, and 106,000 partial hip replacements were performed.^{1,2} With such a large volume of operative procedures performed each year, minimizing complications from procedures is necessary to optimize outcomes.

Surgical site infections (SSIs) are the most common health care-associated infection, accounting for 31 percent of all health care-associated infections among hospitalized patients, and an estimated 157,000 SSIs were associated with inpatient surgeries in 2011.^{3,4} Furthermore, SSIs contribute to significant morbidity and mortality, with a mortality rate of 3 percent. SSI-associated deaths are directly attributable to the SSI in 75 percent of cases.⁵

In regards to arthroplasty, SSI is a definite risk factor for the development of prosthetic joint

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infection (PJI).⁶ The treatment of SSIs imparts a major economic burden on the health care industry.⁷ The rate of infection after arthroplasty is relatively low (1-2 percent). However, the potential need for further surgery and prolonged hospitalization, combined with a large volume of annual arthroplasty procedures, results in an approximate annual cost between 150 and 200 million dollars for treatment of arthroplasty-associated infections.⁸

The need for SSI prevention has been a primary concern in health care settings since the advent of modern medical practices, and recent attention has been focused on local wound care. The use of silver to prevent infection has been documented to date back nearly six millennia and has been used regularly as an antimicrobial for water purification, cardiac devices, catheters, and various surgical appliances and implants.^{9,10}

Silver compounds are readily ionized in the presence of water, body fluids, or tissue exudates, and the antimicrobial effects of silver ions are related to their ability to interact with bacterial or fungal cell membranes, as well as irreversibly denaturing key enzyme systems within the cells. Because silver is modulated by induction and binding to metallothioneins, the cellular toxicity of silver is low and actually contributes to tissue repair.¹⁰

Silver-containing dressings have been shown to block entry of and retain external bacteria, and in turn the reduced bacterial burden accelerates and improves wound healing.¹¹ Utilization of the antimicrobial properties of silver ions in local wound care has shown promising results in prevention of local infection and improvement of wound healing. Greater reduction of bacteria, superior wound healing efficacy, reduced hospital length of stay, and reduced amount of surgical debridements have been demonstrated with silver dressing combined with negative pressure wound therapy (NPWT) compared to NPWT alone.¹²⁻¹⁴ Silver-containing dressings have also been shown to reduce the incidence of incision complications and reduce scar length in foot and ankle incisions, reduce external fixation pin tract infections, and improve outcomes in fingertip injuries.¹⁵⁻¹⁷

Currently, there are numerous commercially available silver-containing dressings on the market that are used in health care settings, each with varying spectrums of bactericidal activity and wound care properties.¹⁸ The AQUACEL® Ag Surgical dressing (ConvaTec) is an ionic silver-containing dressing with occlusive properties. The dressing contains an adhesive hydrocolloid perimeter and a central portion containing ionic silver-impregnated

cellulose fibers that are designed to contour to the wound bed to eliminate dead space and absorb exudates, while preventing lateralization of silver ions.^{19,20} The dressing is covered with a polyurethane film that acts as a waterproof barrier.²⁰

The objective of this study was to determine if routine postoperative use of a silver-impregnated occlusive dressing for orthopedic procedures has an effect on the rate of postoperative SSI compared to standard gauze dressing in a community hospital setting. Our hypothesis is that the use of postoperative silver-impregnated occlusive dressings will reduce the rate of surgical site infections in orthopedic procedures in a community hospital setting.

Methods

The study was designed as a retrospective chart review. Using the electronic patient database at our hospital, Current Procedural Terminology (CPT) codes were compiled for total hip arthroplasty (THA), total knee arthroplasty (TKA), hip hemiarthroplasty (HHA), knee unicompartmental arthroplasty (UKA), revision THA (RTHA), and revision TKA (RTKA) over a four year span.

Standard surgical protocol for these procedures at this institution starting January 2014 included routine use of postoperative Aquacel dressing for seven days after surgery. Before January 2014, standard gauze dressings were routinely used postoperatively for these procedures. Therefore, CPT codes were compiled from January 2012 to January 2016, giving a two year span for which patients were dressed with standard gauze dressing and a two year span for which patients were dressed with an Aquacel dressing. Seven hundred nineteen patients with THA (207), TKA (466 [1 RTKA, 16 bilateral TKA]), HHA (39), or UKA (23) were identified in the standard gauze dressing group. Six hundred sixty-seven patients with THA (196 [1 RTHA]), TKA (453 [1 RTKA, 20 bilateral TKA]), HHA (33), or UKA (5) were identified in the Aquacel group.

Procedure codes with an associated inpatient International Classification of Diseases (ICD-9) diagnosis code of SSI were then identified to determine patients with acute postoperative SSIs. Statistical analysis was performed using Microsoft Excel 2007.

Results

The overall rate of acute postoperative SSI was higher (1.39 percent) in the standard gauze dressing group compared to the Aquacel group (1.20 percent), although using chi-

square analysis proved this difference to be insignificant ($p=0.38$, 95 percent CI) (Figure 1).

TKA SSI rate was also higher (1.92 percent) in the standard gauze dressing group compared to the Aquacel group (1.32 percent), which also was not significant ($p=0.24$, 95 percent CI) (Figure 2).

With exclusion of RTKA, the primary TKA SSI rate was 1.72 percent in the standard gauze group compared to 1.11 percent in the Aquacel group ($p=0.22$, 95 percent CI). THA SSI rate was lower in the standard group (0.48 percent) compared to the Aquacel group (1.02 percent) ($p=0.27$, 95 percent CI) (Figure 3).

No SSIs were observed in either group for RTHA, HHA or UKA (Table 1).

Conclusions

Periprosthetic joint infections (PJIs) are a major cause of morbidity in patients who have underwent joint replacement surgery. In addition, they are a significant contributor to health care costs. The need to reduce PJIs has been well recognized since the advent of joint replacement surgery. While many other strategies have been studied and utilized for the purpose of reducing these infections, many of these are based on weak or anecdotal data, or they are not cost effective.

The type of postoperative dressing used in total joint replacement surgery has not been standardized in most orthopedic institutions. This is a potentially overlooked variable that may have significant implications in the development of acute SSIs potentially leading to early PJIs.²¹ Most silver-impregnated occlusive dressings, such as the Aquacel surgical dressing, are a cost-affordable measure to standardize preventative measures against acute surgical site infections that may lead to PJIs. Studies in the past have shown success with using the Aquacel dressing to reduce the incidence of PJIs at institutions with large volumes of total joint replacement surgeries.²² The results found in this study may further demonstrate the effectiveness of using silver-impregnated occlusive dressings in decreasing acute SSIs in a community hospital setting. This was most profound with primary total knee arthroplasty. While these differences observed were proved statistically insignificant, relatively small sample size was believed to contribute to lack of significant, and it is felt that with larger sample sizes, the observed reduction in SSI rates would prove significant.

A major limitation to the study was the lack of patient risk factor data that may have been potential confounding variables and exclusion

criteria. Other limitations included the lack of standardized infection prevention measures in regards to preoperative (laminar flow operating rooms, space suits, prophylactic antibiotics) and intraoperative (surgical technique and time, betadine lavage) strategies amongst surgeons operating at this institution. Revision total joint surgery carries a greater risk for acute SSI and PJI compared to primary arthroplasty, and revision surgeries were not routinely performed at this institution with enough data to make a conclusion about the effectiveness of silver-impregnated occlusive dressings in preventing acute SSI.^{23, 24} Areas for future research include the use of these dressings in revision total joints at an institution with significant volume of revision surgeries. A large, prospective study with long term follow up is needed to further evaluate the effectiveness of this preventative measure.

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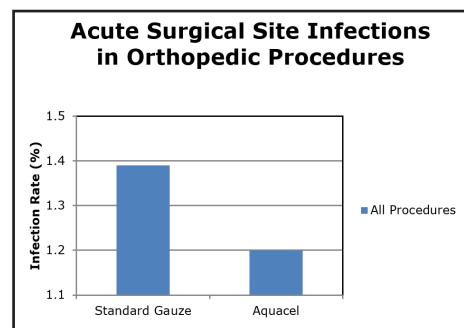


Figure 1: Rate of acute surgical site infections in all procedures.

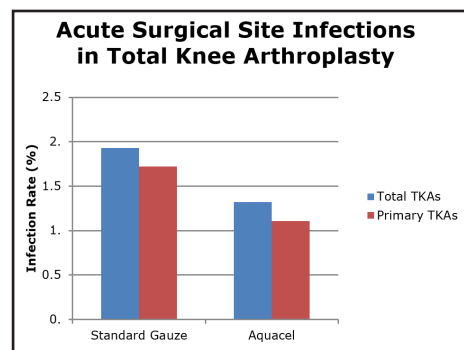


Figure 2: Rate of acute surgical site infection in total knee arthroplasty.

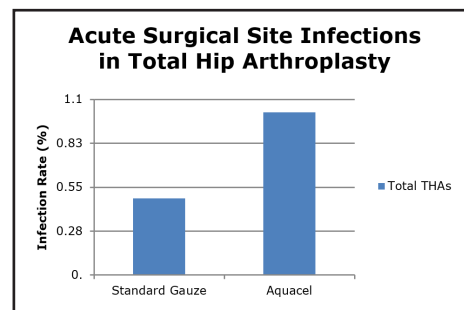


Figure 3: Rate of acute surgical site infections in total hip arthroplasty.

		Total		Standard Gauze		Aquacel	
		n	SSI	n	SSI	n	SSI
		1386	18	719	10	667	8
THA		403	3	207	1	196	2
	Primary	402	3	207	1	195	2
	Revision	1	0	0	0	1	0
TKA		919	15	466	9	453	6
	Primary	918	13	466	8	452	5
	Bilateral	36		16		20	
	Revision	1	2	1	1	1	1
HHA		72	0	39	0	33	0
UKA		28	0	23	0	5	0

Table 1: Number of procedures and associated surgical site infections.

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Possible Cardiac Complications Associated with the Use of Tranexamic Acid

(continued from page 16)

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LECOM DEAN'S CORNER *(continued from page 6)*

Interprofessionalism is based upon a fundamental belief that if students, from different programs, unite for educational outreach and for other initiatives, they inherently will be much more inclined to communicate, to adopt a team-first mentality, and to work more effectively together once they begin practicing. This endeavor has long been a point of emphasis at LECOM.

The LECOM Senior Living Center and the Dental Group Practices (in Erie and in DeFuniak Springs, Florida) create further opportunities for medical, pharmacy, and dental students to acquire joint experience in clinical settings and to work with association partners.

At LECOM, educational collaboration is, and will continue to be, an integral and fundamental part of training the next generation of health care professionals.

Of course, there is little doubt that the Accreditation Council for Graduate Medical Education (ACGME) and its single accreditation system for graduate medical education have renewed the challenges faced by those in the osteopathic profession. Nonetheless, we stand firm in the knowledge that all that we have accomplished over the last century in our struggles to be recognized by the public, by the

insurance providers and by the government as a distinct, but equal profession, must endure.

As our organizational partners support our students, our osteopathic physicians and medical professionals continue to practice at prestigious and nationally acclaimed hospitals, standing united against the comprehensive usurpation of autonomy in our osteopathic profession.

Like our very nation, the history of our profession has experienced a great evolution as our courage to lead in the osteopathic philosophy has led to our greater success. From our pledge to whole-person, whole-body care we have taken the osteopathic field into a time of abundance as we stand ready to answer our national call for primary physicians.

Osteopathic professionals are being ever supported by key organizations such as POMA to defend against objectives that stand in conflict with our own mission.

Although the profession has been affected by these recent developments, we press on to embrace the positive aspects of collaborative endeavors that continue to underscore the common ground of osteopathic medicine.

Fraternally,
Silvia M. Ferretti, DO

JPOMA is Seeking Articles from You!

The March 2018 issue will focus on the joys of medicine. Why did you become a physician (beyond the common answer "to help people"), why did you chose your specialty, why do you continue to practice rather than retire, why did you leave clinical practice for another path? Was it for the stories you could tell, the relationships you could develop, the idea of being in a field where every day is different?

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Professional Organizations Help Stem Burnout

(continued from page 12)

minimizing the negative effects, perpetually expanding our knowledge and skills, enhancing professional meaning, maintaining collegial support and interpersonal connections, fostering professional and personal growth, and nurturing mentorship and sponsorship. Taken together, associations' roles combat compassion fatigue and burnout and intensify the enjoyment of practicing medicine.

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Some Self-Care Tips

- Reflection upon work: What inspired/moved me today? Why do I do this?
- Attend to health: diet, exercise, rest, regular health care, plan quiet time every day
- Plan activities that rejuvenate: Play!
- Give important relationships priority
- Debrief emotional events — you're not alone
- Seek professional support when needed
- Promote feelings of choice and control when able
- Stop at a window in your workplace and notice something in nature — consciously give it your full attention for a few moments
- Remember to laugh!
- Deliberately develop a "role-shedding ritual" at the end of the day
 - ✧ Pay attention to putting away your stethoscope or hanging up your white coat
 - ✧ Use the drive home from work deliberately
 - * Take the longer more interesting route
 - * Listen attentively to news, music or books on tape
 - ✧ Shower and/or change your clothes
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INFO FOR CONTRIBUTORS

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Book reference — List the author's name, book title, location and name of publisher, year of publication. Exact page numbers are required for direct quotes.

Example — Fudenberg HH, Stites DP, Caldwell JL, et al: *Basic and Clinical Immunology*, ed 2. Los Altos, California, Lange Medical Publications, 1978.

Book chapter reference — List the author's name, chapter heading, editor's name, book title, location and name of publisher, year of publication and page number(s).

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Each article submitted will be forwarded to the editor-in-chief for review. Articles deemed acceptable will then be sent to the head of the POMA committee related to the subject involved, and an independent reviewer at the editor-in-chief's discretion. Authors whose articles are accepted for publication will be notified in writing, and will be notified if any rewrites or clarifications are needed before publication. Manuscripts submitted cannot be returned.

CME Quiz

Name _____ AOA # _____

1. In what formulations can TXA be administered?
 - a. Oral
 - b. IV
 - c. Topical
 - d. Rectal
2. What is the mechanism of action of TXA?
 - a. Antithrombin 3 inhibitor
 - b. Factor Xa inhibitor
 - c. Plasmin inhibitor
 - d. Plasminogen activator
 - e. Blocks activation of Vitamin K dependent coagulation factors
3. Which is the FDA approved indication for TXA?
 - a. Long term use to prevent bleeding in a clotting disorder
 - b. To prevent excessive blood loss during orthopedic spine surgery
 - c. To prevent excessive blood loss during orthopedic total joint surgery
 - d. For short term use to prevent/reduce hemorrhage in hemophiliacs
 - e. To prevent vascular thrombosis during cardiac surgery
4. Standard gauze dressings have been shown to decrease post-operative surgical site infection rates after total knee arthroplasty.
True False
5. Surgical site infections are the most common health care associated infection.
True False

To apply for CME credit,
answer the following questions and return to the POMA Central Office, 1330 Eisenhower Boulevard, Harrisburg, PA 17111-2395. Upon receipt of the quiz, we will forward passing scores to the AOA CME Department. You will receive two Category 2B AOA CME credits.

Answers to Last Issue's CME Quiz

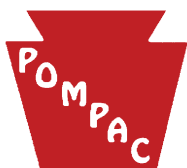
1. True
2. False
3. True
4. c

(Questions appeared in the September 2017 Journal.)

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