HIGHLIGHTS OF THE

2018 AGA TECH SUMMIT

MARCH 21-23, 2018
BOSTON, MA

An update on GI innovation

An official publication of the AGA Institute
Sponsored by the AGA Center for GI Innovation and Technology

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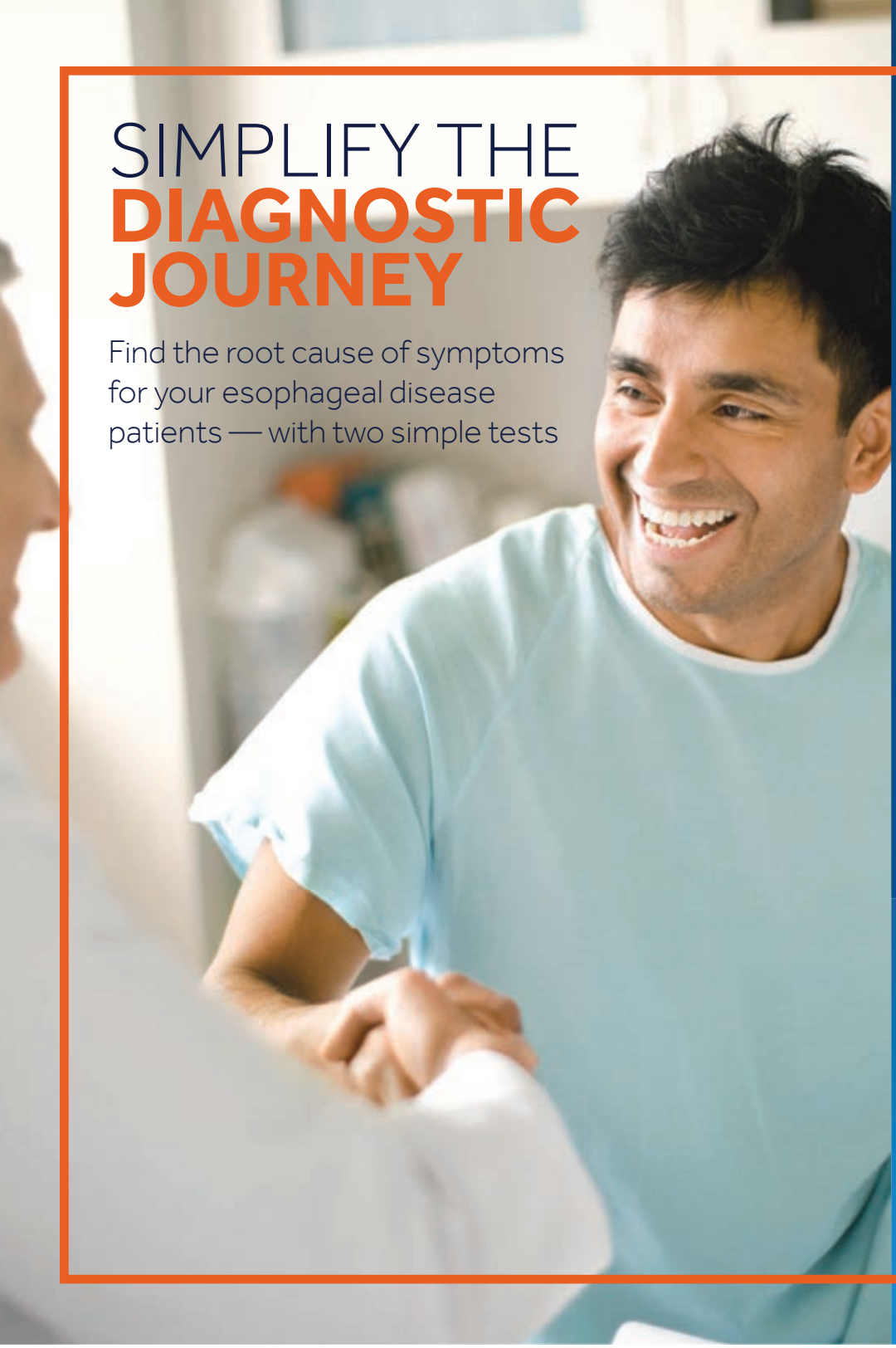

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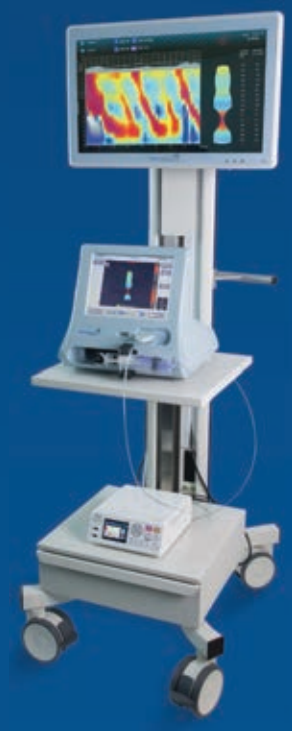

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Innovation in GI: From AGA Tech Summit to your practice

After a successful and invigorating 2018 AGA Tech Summit, we can confidently say that innovation continues to be alive and well in the GI space. As you'll see in the pages of this comprehensive AGA Tech Summit report, there is no shortage of novel ideas or potentially disruptive technologies poised to improve how we care for our patients.


DR. MUTHUSAMY


DR. KOMANDURI

What's most special about the AGA Tech Summit, sponsored by the AGA Center for GI Innovation and Technology, is the camaraderie and shared commitment to innovation from physicians, innovators, industry, regulators, and investors. By coming together for this important dialogue, we can continue to move the pendulum forward and work toward new innovations that ultimately will improve patient outcomes. As the chair and vice chair of the center, we're committed to continuing the conversations from the AGA Tech Summit year-round to help bring promising new technologies to our practices.

In this report, you'll find summaries of select AGA Tech Summit presentations and key takeaways that will help you as a practicing gastroenterologist. Our recap of the annual AGA Tech Summit Shark Tank will give you insight into five new technologies making a splash in GI – flip to page 9 to see which device won this year's Shark Tank. We also discuss physician barriers to incorporating new technologies, with tips for overcoming these challenges. You'll also find articles on areas ripe for innovation in GI, including digital health, tissue resection techniques, and obesity treatment. Finally, for our physician innovators, we have advice and guidance throughout on how to take your idea from concept to product.

We're looking ahead to the 2019 AGA Tech Summit, taking place April 10-12 at the Mark Hopkins Intercontinental in San Francisco, CA. This will be our 10th annual meeting of stakeholders in GI innovation – it's amazing to reflect on all we've accomplished in the last 10 years. If you read this report with great interest, we hope you'll join us for this unique and lively dialogue on advancing innovation in GI.

If you'd like to connect with us about innovation in GI – send us an email at cgit@gastro.org or visit www.gastro.org/CGIT.

Sincerely,

V. Raman Muthusamy, MD, AGAF, FACG, FASGE
Chair, AGA Center for GI Innovation and Technology

Sri Komanduri, MD, AGAF
Vice Chair, AGA Center for GI Innovation and Technology

Highlights of the 2018 AGA Tech Summit

AN OFFICIAL PUBLICATION OF THE AGA INSTITUTE

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FRONTLINE MEDICAL COMMUNICATIONS

Nanotechnology breakthroughs coming for GI diagnostics and therapeutics

BY TED BOSWORTH

Nanotechnology is positioned to bring fundamental changes to the diagnosis and treatment of GI diseases, according to Vadim Backman, MS, PhD, professor of biomedical engineering at the McCormick School of Engineering, Northwestern University, Chicago.

"The ways in which nanotechnology will change the field are going to be quite significant," said Dr. Backman, who gave the Keynote Presentation at the 2018 AGA Tech Summit. He described progress toward breakthroughs in diagnostics – particularly early detection of GI cancers – and therapeutics, such as nanocage transport of drugs across cell membranes. Applications have moved beyond the theoretical.

Nanotechnology is a broad term that involves manipulation of any material on a nano scale, often defined, although not strictly, as less than 100 nanometers (nm). Most bacteria measure more than 1,000 nm in at least one direction. A DNA nucleotide is 2 nm. In the diagnosis and treatment of human diseases, the advantages of working on a nanoscale mean opportunities to act on the most fundamental molecular processes, including the earliest stages of pathophysiology.

In diagnosis, nanotechnology has the ability to detect genetic and epigenetic distortions that are initial steps to carcinogenesis. One set of studies has been performed with partial-wave spectroscopic microscopy capable of quantifying the properties of cellular structures on a scale as low as 20 nm. Work in this area has already successfully identified events in neoplasia development that preceded any alteration detected by conventional techniques, such as histology.

"With nanoscale-sensitive optics, it is now possible to detect changes in cell and tissue structure that we have connected to the earliest steps in tumorigenesis," Dr. Backman said. This work largely derives from progress in defining the topography of chromatin, a term that encompasses the protein, DNA, RNA, and protein composition of chromosomes. The work is relevant to all solid tumors, not just GI cancers. Based on the current status of the science, Dr. Backman foresees not just detection of the earliest events in cancer development but also opportunities to tailor epigenetic therapies for personalized medicine.

In regard to other opportunities to improve diagnostics in GI diseases through nanotechnology, Dr. Backman spoke of nanoscale constructs that serve as contrast agents to visualize molecular structures and processes. These can be delivered endoscopically or systemically to provide unprecedented 3-D imaging, allowing such structures as cell receptors to be visualized and labeled.

The potential therapeutic applications of nanotechnology involve new approaches to altering disease progression. In addition to explaining the novel opportunities provided by delivering drugs on a nanoscale to alter cell processes in a way that would not be otherwise possible, Dr. Backman described how nanotechnology can be applied to influence global patterns in gene transcription. This is achieved by altering the

Continued on following page

VIDEO HIGHLIGHTS

Nanotechnology is making a mark in gastroenterology

BY LORA T. MCGLADE

Nanotechnology, though small in scale, is making a big difference in gastroenterology. Nanoparticles can deliver therapeutic compounds or enable other diagnostic tools, said Vadim Backman, PhD, the Walter Dill Scott Professor of Biomedical Engineering at Northwestern University, Chicago, in a video interview at the AGA Tech Summit.

Nanotechnology can treat disease by reprogramming gene expression or gene regulation. Nanoparticle formulations are now approved by the Food and Drug Administration for treatment of esophageal, colon, and pancreatic cancers, said Dr. Backman, but the ability of nanotechnology to reprogram biological processes at the genetic level has researchers looking at treating inflammatory diseases and regenerating tissues.

MDEDGE NEWS

To see a video interview with Dr. Backman, go to mdedge.com/gihepnews/aga-tech-summit.

Serial entrepreneur examines the risk-to-reward ratio in GI innovation

BY TED BOSWORTH

Just out of fellowship, Christopher C. Thompson, MD, director of therapeutic endoscopy, Brigham and Women's Hospital, Boston, adapted an antireflux suturing device for use in a bariatric procedure. It worked so well he began using it routinely and taught others the technique. That was the first step in a journey that has taken him from consulting with industry to a founder of start-ups.

DR. THOMPSON

"The device company heard about what we were doing and was interested," Dr. Thompson recounted during his How-I-Did-It lecture at the 2018 AGA Tech Summit. In the end, he served as a consultant in the development of a new suturing device specific for the bariatric procedure. This included helping secure a patent and learning first-hand what steps are needed to get a device to market.

"It was a great learning experience. I now knew something about the role of a consultant and the process of product innovation," Dr. Thompson explained. He also learned that the low-risk participation of a consultant is a low-reward proposition. The new product was successful, but Dr. Thompson received no stock, and the licensing fee went to the hospital.

"I do not have any regrets. It was good for my career and fun to be involved, but there was not much financial gain for me or for my department," Dr. Thompson said.

His subsequent experience with licensing was an incremental step forward. In one example, he worked on developing an endoscopic simulator, an important unmet need both for teaching and evaluating skills in diagnostic colonoscopy, including a kinematic analysis that helped identify techniques that are associated with high levels of skill.

"We developed the technology in-house through a series of grants. The risks were low, but the rewards were better because the money helped fund activities in our department," he said.

That device, too, has been very successful, but Dr. Thompson said it is important to recognize how far innovation can go when the work stays in the academic setting and the goal is licensing the technology. More recently, he took a nonsurgical anastomosis device through preclinical testing, but he was then unable to attract a device company for the next steps of development. "With no one interested, we created a start-up," Dr. Thompson said.

The company, GI Windows, has now taken this product, a magnetic endoluminal anastomosis bypass device for the treatment of diabetes, into advanced stages of clinical testing. Relative to licensing arrangements, this involved a different level of participation.

"A start-up means creating a board, raising money, and being involved in details that can involve a lot of heavy lifting," Dr. Thompson said. "It is basically a second job."

The ongoing clinical studies in patients with diabetes have been very encouraging. Dr. Thompson reported that a large proportion of patients with diabetes fitted with the device have been able to reduce or discontinue their antidiabetic medications, and high rates of loss of excess weight have been documented.

GI Windows was created for the sole purpose of developing the anastomosis device, but Dr. Thompson also was involved in creating another company, now sold, that started without a specific device in mind.

"The products we developed were just from brainstorming on unmet needs, and we had several successes. That was a chance to learn new areas of the business, including building a sales force and learning how to get involved in international distribution, which were separate from trying simply to produce a viable clinical tool," he said.

Creating companies, rather than licensing ideas, trades higher risk for greater reward, but Dr. Thompson emphasized that these rewards are not just financial.

"It is exciting to develop a team you trust, get a successful company off the ground, and watch it grow," Dr. Thompson said. He indicated that the risk-to-reward calculation should not be undertaken independent of the value of the learning experience.

Continued from previous page
chromatin structure.

"It is now understood that chromatin acts like software in mediating gene activities," Dr. Backman explained. "In the case of cancer, normalization of chromatin structure can predictably modulate global patterns of gene expression. There is now evidence that modulation of chromatin structure with macrogenomic engineering may address cancer as well as other illnesses."

In most cases, the advances described by Dr. Backman are not speculations based on the potential of the technology but rather on concepts that are actively being developed. "Nanotechnology is positioned to advance personalized medicine and tailored therapeutics," Dr. Backman said. "We do not yet have applications ready for regulatory approval, but they are coming."

With these pearls, the med-tech space can be your oyster

BY MICHELE G. SULLIVAN

Having a great idea is just the first step to landing a financial partner in device development – backers also scrutinize more intangible qualities.

The willingness to work as part of a team, the ability to project realistic expectations, the fortitude to take risks and persevere when circumstances get tough – these attributes are critical to forging a strong strategic alliance with a financial partner, Brian Tinkham said at the 2018 AGA Tech Summit.

"Some of the brightest physician minds in the world are not the best med-tech device engineers," said Mr. Tinkham, vice president of sales in GI Solutions at Medtronic. "When you enter the space of med-tech development, you have to join a cross-functional team. You'll need skill sets that aren't instinctive to you or your closed network in order to become successful."

Mr. Tinkham offered what he called "practical pearls" for securing the financial backing every physician entrepreneur needs to bring an idea to the marketplace.

ROBERT LODGE/MDEDGE NEWS

Mr. Tinkham is vice president of sales in GI Solutions at Medtronic.

Put your own skin in the game

"To me, 'skin in the game' is mainly money. Investing your own money, your family's money, changes the way you behave at the board meeting and when you spend that money," Mr. Tinkham said. "We like people who are all in on this. When I see an entrepreneur who's showing a return that's not good enough for his own investment, I can lose confidence and trust. We want people who won't walk away from their money, their family's money, or my money; when times get tough and challenging, decisions need to be made."

Be realistic

There's a difference between confidence and irrational confidence, Mr. Tinkham said. "If you come to me presenting a game plan that says you'll have a commercially viable product in 1 year for a $500,000 investment, you'll shoot your credibility right off. We know exactly how hard it is to build a $10 million business, never mind a $100 million business. When you obviously don't understand what lies ahead of you, it hurts your credibility. Work with people who have experience and let them help you present your ideas and goals in a realistic way, and that will help with raising capital so you can execute your plan."

Be capital efficient

"The key takeaway here is that raising $100 million doesn't necessarily make for a strong return for investors. The strong return comes with $20-$40 million raised. Most likely businesses that have raised that much have built a commercial structure, provided proof of concept with some actual sales, and generated enough customer interest to attract strategic partners."

Location, location, location

"This is so important when you're developing technology: You need to know where the people with high levels of competency are and where the money is. If you don't live near these localities, get on a plane and get there – that's where the business is being done."

California and the Philadelphia-Boston-New York corridor are the two biggest med-tech and investor hot spots in the United States, Mr. Tinkham noted. Smaller centers of innovation are scattered around the country, including Seattle, Denver, Minneapolis, Chicago, Pittsburgh, Washington, Raleigh-Durham, Atlanta, Austin, and Phoenix.

Be patient

"Adopting a new technology takes time, and the more disruptive the idea, the longer it takes to achieve market adoption. To translate that into med-tech, the time from founding a company to exit will take more than 5 years. Only 10% of companies do it in less time than that," Mr. Tinkham said. "And you have to remember that not all of the exits we see are good ones – they can be exits in which investors lose most of the capital they've brought into the company."

De-risk

Be the entrepreneur who takes a vision to a viable product.

"Most physician entrepreneurs come up with an idea and protect it – but don't move it further. We want to see an idea that's been created and then de-risked. You protect it, you prototype it, go into preclinical studies, then clinically validate it or obtain regulatory approval. And then in the end, to us the best measure is your revenue. Are customers buying it? Do they see in it the same value that you, the entrepreneur, sees? If you can get it there, you've got something. The further you de-risk something, the more attractive you become."

What's in the way of you and new tech?

BY ELI ZIMMERMAN AND MICHELE G. SULLIVAN

Bringing new technology to your practice is not as simple as flipping a switch, as attendees of the AGA Tech Summit session "Physician Perspective on Barriers to Incorporating New Technology" learned.

"As physicians think about being a part of taking on new technology, there are varying perspectives, including the perspective they have about their patients and the perspective they have for themselves," Richard Rothstein, MD, chair of the department of medicine at Geisel School of Medicine at Dartmouth, Hanover, N.H., said in an interview. "However, there are other perspectives as well, like the perspectives of the hospital or the ambulatory endoscopy center in which they work."

He presented an intriguing historical example. Within months of the first demonstration of anesthetized surgery in 1846, the use of ether and the machine to deliver it were spreading rapidly through hospitals in large U.S. cities. European adoption soon followed.

However, decades passed before there was wide acceptance of Lister's ideas on carbolic acid as a surgical antiseptic.

"Why was one technology adopted early and one later? Incentives to adopt both went in the same direction – improved patient outcomes. Both were based on ideas that violated prior beliefs. Both were technically complex. But one combatted a visible and immediate problem: pain. The other combatted an invisible and unproven problem: germs. Both made life better for the patient – but only one made life better for the surgeon. And that one, anesthesia, was the one that was quickly adopted."

Even today, clinicians are the main drivers of the adoption of novel medical technology. They fall into two general categories, Dr. Rothstein said: early adopters, who want to be the first to offer an exciting new procedure, and late adopters, who wait for more information and want all the issues of that technology to be sorted out before diving in.

Each one stands in the same circle, however, forced to evaluate the issues that come along with adopting new tech, including training, credentialing and insurance, facility support, and how the new tool or procedure might affect the entire clinical team.

Facilities have to tussle with these issues, too, Dr. Rothstein said.

Administrations wonder, "'Will I get paid for this? Will it displace something else that's equally effective that could be making more money? What resources do I need to implement it? Will it impact malpractice insurance rates for clinicians who work at my facility?'"

Patient choice also plays into the matter. Third-party payers may or may not have cutting-edge tech on their payment ledger. The specter of a self-pay procedure, no matter how potentially effective, is an enormous deterrent for patients, especially when figuring in the possibility of footing the bill for any associated complications. And, of course, new technology and procedures lack the deep pool of efficacy and safety data that established ones lean upon – another potential sticking point for both clinicians and patients, Dr. Rothstein said.

"There are a lot of great ideas out there, and a lot of innovative devices, but without addressing the barriers to adoption, the technology will never get to the targeted goal of delivering better care to our patients," he said.

VIDEO HIGHLIGHTS

Digital health tech is here to be embraced

BY LORA T. MCGLADE

One of the innovations in gastroenterology used on a day-to-day basis is digital technology, said Sri Komanduri, MD, AGAF, in a video interview at the 2018 AGA Tech Summit.

Everything from Internet rate-your-doctor sites to bowel prep apps and EHRs qualify as digital health technology, said Dr. Komanduri, the medical director of the GI laboratory and director of interventional endoscopy at Northwestern University in Chicago and vice chair of the Center for GI Innovation and Technology.

Digital technology can facilitate endoscopy procedures, help patients communicate with their doctors about chronic conditions, and help patients better understand their illness. The role of the physician is to embrace those technologies that improve the quality of care.

To see a video interview with Dr. Komanduri, go to mdedge.com/gihepnews/aga-tech-summit.

2018 AGA

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Entrepreneurs attempt to convince the Shark Tank experts that they can address unmet needs

BY TED BOSWORTH

At the 2018 AGA Tech Summit, this year's Shark Tank lineup included an automated system for video capture of endoscopy, a feeding tube that prevents aspiration in intubated patients, a tool to accurately measure polyps captured on colonoscopy, a device that targets gastrointestinal cancers with electrical pulses, and a new method for real-time stool testing of infectious pathogens.

In each case, the presenting entrepreneur vowed to the Shark Tank panel of experts that their innovation is addressing an important clinical need. In announcing the winner, V. Raman Muthusamy, MD, AGAF, who is the chair of the AGA Center for GI Innovation and Technology and director of interventional endoscopy and general GI endoscopy, University of California, Los Angeles, said, "We have rarely had such a strong group of candidates."

New for 2018, both the Sharks and AGA Tech Summit attendees voted on a winner. The unanimous winner was Chang-Hee Kim, PhD, who presented a new rapid test for identifying infectious pathogens in stool. The sharks were looking for several things: novelty/immediate patient impact; business plan; and pitch. While all of the participants were close, the immediate patient impact for Dr. Kim's innovation gave him a leg up on his competitors.

Robert Lodge/MDedge News

From left: Dr. Sri Komanduri, Shark Tank winner Dr. Chang-Hee Kim, Dr. V. Raman Muthusamy

New device permits real-time stool sample analysis

A new tool for rapid analysis of stool for pathogens may be revolutionary in that it can provide results within 15 minutes rather than the days normally required when stool samples are sent to a laboratory, according to Dr. Chang-Hee Kim, chief executive officer of GoDx, Inc. The patent-pending methodology developed at Dr. Kim's company permits real-time analysis "at the point of need and without the need for a lab." In addition to the efficiency, the paper-based test – which Dr. Kim compared to a pregnancy test because there is a color change with positive results – has the potential to improve outcomes.

Real-time testing "will decrease the loss of patients to follow-up and accelerate the time to treatment," Dr. Kim asserted. "The test is also likely to reduce the spread of nosocomial pathogens if rapid infection control reduces spread."

The test, which Dr. Kim expected to be made available at a cost of $100, also will be substantially cheaper than current laboratory analyses. In experimental studies, the accuracy has been at least as accurate as polymerase-chain reaction testing, according to Dr. Kim. He sees applications not only in hospitals but at sites where ordering laboratory studies are not normally available, such as on cruise ships, in nursing homes, or in the military.

In the Shark Tank session, the main concerns expressed were about how this test will fit with Clinical Laboratory Improvement Amendments compliance. Herb Lerner, MD, a former officer in the Food and Drug Administration and now senior director of medical and regulatory affairs at Hogan Lovells, a Washington–based law firm, urged Dr. Kim to approach the FDA as soon as possible for advice on how to address this and other potential obstacles to a commercial product.

GI endoscopy capture, storage, and sharing

In introducing an automated method of capturing videos taken during colonoscopy, Matthew Z. Schwartz, the cofounder of Virgo Surgical Vid-

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eo Solutions, said, "There is currently no low-cost, user-friendly way to systematically capture GI endoscopy video." Relative to existing products, which "require complicated formatting and time-consuming setup for each procedure recording," the plug-and-play system developed at Virgo "works with any existing endoscopy system that has a video output." The videos are designed for Cloud storage.


MR. SCHWARTZ

"Our long-term vision is to create the largest and highest quality repository of GI endoscopy videos," said Mr. Schwartz, who added that support tools, including clinical decision-making aided by artificial intelligence, are being developed to provide even more value for quality control, research, and training.

Several Sharks, including Tom Shehab, MD, managing director, Arboretum Ventures, Ann Arbor, Mich., asked for more information about the value proposition for a proposed cost of $500 per month for the system. The answer was that this value would differ for settings, such as in an academic center that might apply the system for training relative to a community setting in which the main purpose might be quality improvement.

New NG tube addresses aspiration risk

Pulmonary aspiration, along with symptomatic gastric reflux, is a common clinical challenge in intubated patients on a feeding tube, but a novel nasogastric tube equipped with a dual-balloon system is designed to solve this problem, according to Talal Sharaiha, MD, the founder of Aspisafe Solutions. He said that reducing the risk of aspiration is important because it is associated with pneumonia, erosive inflammation, and upper GI bleeding. He called it the most common cause of upper GI bleeding in intensive care units.


DR. SHARAIHA

With the use of two balloons, one serves as an anchor and sits within the esophagus. The second baloon serves as an antiaspiration reservoir and sits in the stomach. The antiaspiration balloon, inflated after it is inserted in the stomach, blocks reflux of gastric contents. Contending that there is a large market for this device, Dr. Sharaiha said, "having a feeding tube in intubated patients that prevents gastric reflux and aspiration will dramatically reduce complications and likely help reduce length of ventilation time, ICU time, and length of hospitals stay."

More than one Shark requested further information about safety. Michael L. Kochman, MD, AGAF, the Wilmott Professor of Medicine and director of the Center for Endoscopic Innovation, Research and Training at the University of Pennsylvania, Philadelphia, noted that there have been adverse experiences in the past with other types of balloon devices introduced into the GI tract. He indicated that this may be a potential bar to clinician comfort, so a comprehensive approach to safety analyses should be a priority in clinical development.

Virtual tape measure for colonoscopy measures polyp size

There are risks from the current practice of estimating polyp size, according to Avishay Sidlesky, founder of VTM Technologies. He called these estimates "inherently inaccurate" and asserted that they "lead to erroneous diagnoses, [and] suboptimal treatment and follow-up." He believes that a "virtual tape measure" dependent on an endoscopic laser emitter solves this problem and cited a published paper that confirmed the accuracy of polyp measurements conducted with this device in an animal model.

"Employing dedicated software that analyzes the laser curves in the endoscopic image, the system enables reporting of the size of lesions, diameter, and profile of polyps, longitudinal cross-section of lumens and more," Mr. Sidlesky reported, specifying that the tool can be used alone or integrated into third-party endoscopes. He believes applications can eventually be developed for a variety of endoscopic procedures in addition to colonoscopy.


MR. SIDLESKY

Of Shark comments, several regarded concern about how this measuring tool would be integrated with existing endoscopic systems. Even though the measuring tool can be introduced in an unused channel of available scopes, the image is displayed separately. Michael J. Docktor, MD, clinical director of innovation, Boston Children's Hospital, cautioned that devices that add steps to the workflow in the endoscopy suite may not be as rapidly accepted as one in which the tool is totally integrated with existing systems.

New device treats esophageal cancers with electroporation

There are a variety of tools to treat upper GI cancers endoscopically, including with radiofrequency ablation, cryotechnology, and photodynamic therapy, but morbidity rates are high, according to Declan Soden, founder of Mirai Medical. He described the attributes of a new technology based on electroporation in which electrical pulses painlessly target neoplastic tissue while preserving adjacent healthy tissue. He said that the treatment is performed in a matter of minutes on an outpatient basis.

Continued on following page

Adapting consumer technology into GI practice

BY GREGORY TWACHTMAN AND MICHELE G. SULLIVAN

You can command Alexa to order pizza and spool up your favorite flick, but accessing digital health data remains a struggle. Michael Docktor, MD, wants to change that.

A pediatric gastroenterologist and the clinical director of innovation at Boston Children's Hospital, Dr. Docktor believes that it's just a matter of time before consumer-driven digital technology fundamentally changes the way physicians and patients interact.

"In medicine, we are often in the habit of trying to re-create the wheel," he said during the "Digital Health in GI Disease" session at the 2018 AGA Tech Summit. "My hope and belief is that we can borrow from the best of the consumer technology world and apply that to our world in health care and GI specifically."

Dr. Docktor shared some of the "tools and toys" that have come of his group's program and also "exposed folks to things that they may not be thinking about traditionally in medicine."

In particular, one area he focused on was how certain voice technologies are enhancing health care delivery, such as integration of Amazon's Alexa. Consider Alexa a nurse on call.

We have placed a fairly large bet on voice in health care and built some skills for Alexa.

"At a high level, some things that I think are interesting are virtual assistants and the use of voice in health care," he said. "We have placed a fairly large bet on voice in health care and built some skills for Alexa."

He also highlighted a new virtual reality tool that was recently launched by Boston Children's Hospital to help gastroenterologists better educate their patients.

HealthVoyager was developed in conjunction with Klick Health. The kid-friendly app lets children take a virtual ride through their GI tract. Clinicians draw in abnormal findings on a simplified template. The app then re-creates those findings – lesions, polyps, or inflammatory changes – in the positions they actually occupy in the patient. It generates a QR code that's given to the patient, allowing the child to access her imaging in a HIPAA-compliant manner.

It's cool, sure, Dr. Docktor said. But does it bring any value to the physician-patient interaction?

"The challenge of digital health is to prove that there's actual value, it's not just a bunch of snazzy tech. Are patients really using it? Sharing it? Are they educating themselves and their family and their community? We want to study this clinically and validate whether or not it results in improved adherence and improved patient satisfaction."

He covered other technologies,

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"Clinical results to date have demonstrated the benefit of the technology in the treatment of late-stage esophageal and colorectal disease," Mr. Soden said. He believes that the "unique selling point" of this electroporation treatment, which is part of a complete treatment regimen, "is that it renders tumor tissue leaky or porous, allowing absorption and uptake of drugs." Relative to current standards, he believes the treatment has multiple advantages, not least of which is preservation of quality of life.

The Sharks posed many technical questions about this strategy that might narrow the applicability of this device. For example, Trey Reed, MD, medical director of Humana, posed questions about the depth of penetration of the electoral pulses and where they can be adjusted for tumors of different sizes.

MR. SODEN

He also questioned whether the device will be too large to penetrate lumens obstructed by tumor. Although Mr. Soden believes that the device will be versatile, he acknowledged that its role might be better understood when phase 2 trials begin later this year.

A moderator at the Shank Tank session and a previous CGIT Chair, Dr. Kochman reported that he was impressed with the crop of entries. As one of the creators of the AGA Tech Summit, Dr. Kochman has the experience to recognize good ideas when he hears them.

"It is gratifying to see the high quality of the Shark Tank presenters. Over the past years, a number of the presenting companies have gone on to obtain additional funding, be acquired, and on to successful launches," Dr. Kochman observed. "We hope the same successes await this year's group."

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such as Chatbox and blockchain, and the roles they can play in health care.

In the not-too-distant future, Dr. Docktor envisions voice assistants integrated into daily medical practice. Amazon's Alexa provides an aspirational goal, he said.

"We are seeing the rise of the voice assistant. By 2020, researchers predict that 50% of all Internet searches will happen just by voice. Voice interface, I believe, will be driving health care by interfacing with patients at home. I predict that over the next 5 years, most of us will have a medical encounter on a device like this. Technology is not a limiting factor in this scenario. It's just red tape on the payer and provider side at this point."

Dr. Docktor's colleague, Carla E. Small, senior director of the Innovation & Digital Health Accelerator at Boston Children's Hospital, provided another real-life example of his digital vision. The Innovation & Digital Health Accelerator is a division within the hospital devoted to identifying, nurturing, and implementing digital health care solutions.

"The world has moved to a technology-enabled health care environment, and we all have to be there along with it," she said. "That also creates a great opportunity for those who have an interest in innovation. There is a lot of ground for changing the way we do things and really leveraging that creativity and innovation."

One Accelerator product that's up and running is Thermia. The online tool guides parents through the anxiety of managing a child's fever.

Thermia quickly and easily allows concerned parents to interpret a child's temperature and understand which steps they should consider taking. Parents enter their child's age, temperature, weight, any associated symptoms like rash, sore throat, or GI upset, as well as comorbid medical conditions. An algorithm issues advice for treatment at home or, if the data suggest a risk or serious problem, recommends a visit to the pediatrician or the emergency room. Thermia also automatically calculates the dosage of over-the-counter antipyretic medications based on age and weight.

The Accelerator is investigating a host of other digital health products in different stages of concept, design, and execution. Health care simply has to embrace the digital trends that are changing the way people interact with their world.

The AGA Center for GI Innovation and Technology wants to hear the unique ways gastroenterologists are leveraging consumer technology in their practices. Send us an email at cgit@gastro.org.

VIDEO HIGHLIGHTS

Digital innovation, consumer point of view can solve clinical problems

BY LORA T. MCGLADE

MDEDGE NEWS

To see a video interview with Ms. Small, go to mdedge.com/gihepnews/aga-tech-summit.

Carla E. Small, MBA, senior director of innovation at Boston Children's Hospital, addressed digital health care in a video interview at the AGA Tech Summit. It is really just providing health care to patients in a digital world, she said, adding that she prefers the term "tech-enabled health care."

One up-and-coming example of this is the use of Alexa-type voice devices to do work and solve small clinical problems. Her program did a nationwide survey of pediatricians and found that half were interested in using voice technology. Artificial intelligence is another area of technology that Boston Children's is using – in particular, they have created algorithms that help pediatricians analyze brain scans of young children, because so few pediatricians are trained in this area. The innovation program also has taken the digital world to pediatric patients in a program called Health Voyager in which children can take a virtual journey through their own diseased intestinal system.

Evidence is essential but not sufficient to move guidelines

BY TED BOSWORTH

For those considering how to navigate their innovative health care strategy into a position that will lead to an eventual guideline recommendation, it is important to think beyond efficacy and safety in the design of randomized trials, according to an overview of how guideline committees currently function.

"Now, in addition to the evidence, AGA looks at three other issues to form the strength of a recommendation," John M. Inadomi, MD, AGAF, head of the division of gastroenterology, University of Washington, Seattle, and clinical research councillor on the AGA Institute Governing Board, said at the 2018 AGA Tech Summit.

These additional considerations include patient preferences, the balance of harms and benefits, and the resources consumed, according to Dr. Inadomi, who has participated in several guideline committees. All three issues for any new strategy must be considered in the context of alternative management. By itself, positive outcomes from a randomized, controlled trial are not enough to guarantee a strong guideline recommendation.

"I think the big thing is that we are trying to move away from a just-the-evidence [approach]," Dr. Inadomi explained to an audience that included physician entrepreneurs and investors with an interest in how to establish a new diagnostic tool or treatment device as a standard of care.

According to Dr. Inadomi, guideline committees are posing more pointed questions about the practical value of one strategy relative to others. They also have increased their scrutiny of the quality and consistency of RCT data in relation to the specific indication being considered.

"The implication of a strong recommendation is that most people in the situation would want the recommended course of action and that only a small proportion would not," Dr. Inadomi explained. On the basis of this criterion, an inconvenient, costly, or poorly accepted therapy may not receive a strong recommendation even if effective. Strong recommendations typically set a standard.

"For the health care provider, that means that most patients should receive that course of action," Dr. Inadomi said. Conversely, "for a weak recommendation, it implies that the majority of people would want this, but many would not."

Strong versus weak recommendations have an impact on health care policy, Dr. Inadomi added. Those measuring quality of care might, in some cases, evaluate the frequency with which patients receive guideline-based care that has been given a 1A rating, the strongest recommendation. Weak recommendations encourage a greater emphasis on shared decision making that recognizes alternative treatment strategies in the context of patient preferences and values.

According to Dr. Inadomi, "It was once thought that all RCTs are good and observational studies are bad," he said, adding that this view has changed with greater appreciation of publication bias and RCT study limitations, such as enrollment of non-representative patient populations. While RCT data are preferred, he contended that observational studies are influential to guideline committees when there is a large effect size and consistent evidence. The move away from evidence-only guidelines is driven by a view toward value, Dr. Inadomi said. For entrepreneurs who hope to shepherd their devices or tools into a central position in clinical medicine, safety and efficacy are critical but may no longer be enough.

Physiology, not mechanics, explains benefit of bariatric procedures

BY TED BOSWORTH

Rather than being a better strategy to block absorption of ingested calories, the future of bariatric surgery depends on treatment combinations that promote weight control through healthy physiology, according to three experts participating in a panel on this topic at the 2018 AGA Tech Summit.

"When we think about the mechanisms of surgery, the mechanical model is dead. ... The current model is all physiological, involving changes in signaling from the gut to the rest of the body," asserted Lee Kaplan, MD, PhD, AGAF, director of the Weight Center at Massachusetts General Hospital, Boston.

Essentially, all bariatric surgery and bariatric endoscopic devices block or restrict absorption of food in an effort to achieve weight loss by mechanically obstructing food absorption. However, Dr. Kaplan said mechanics do not explain what is observed clinically.

The list of evidence is long, suggesting that change in physiologic function is a far more important explanation for weight loss from bariatric interventions, according to Dr. Kaplan. Of his many examples, he noted that pregnant women gain weight normally after bariatric surgery.

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"Now, if you cannot absorb food normally after bariatric surgery, how do you gain weight normally when pregnant?" Dr. Kaplan asked. The answer to this and other examples of a disconnect between a simple food-blocking mechanism and what is observed is that bariatric procedures favorably alter signals that control hunger, satiety, and metabolism.

In discussing advances in small-bowel devices for the treatment of type 2 diabetes, Christopher Thompson, MD, AGAF, director of therapeutic endoscopy at Brigham and Women's Hospital, Boston, also addressed physiologic effects of bariatric surgery. He placed particular emphasis on the foregut and hindgut hypotheses. These hypotheses are "not yet written in stone," but they provide a conceptual basis for understanding metabolic changes observed after bariatric procedures.

"One way that gastric bypass might work is that it alters the incretins that drive insulin secretion and sensitivity," Dr. Thompson said. The same principle has been proposed for a novel incisionless magnetic device developed by Dr. Thompson that is now in clinical trials. The device, which creates an anastomosis and a partial jejunal diversion, achieved a 40% excess weight loss and a significant reduction in hemoglobin A_{1c} levels in patients with type 2 diabetes mellitus in an initial study. Dr. Thompson contended that this effect cannot be explained by a change in nutrient absorption.

A surgeon serving on the panel, Marina Kurian, MD, of New York University's Langone Medical Center, also referenced the evidence for physiologic effects when speaking about gastric bypass and sleeve gastrectomy. Although both involve a blocking function for food absorption, she agreed that there are several reasons why this may not account for benefits.

She also noted that even the procedures that produce the greatest restriction on food absorption are not typically effective as a single therapeutic approach. Rather, her major point was that no approach, whether surgical, endoscopic, or lifestyle, is generally sufficient to achieve and maintain weight loss indefinitely. In her own practice, she has been moving to coordinate multiple options.

"Those of us working in obesity are very aware of its chronicity and how one intervention is not enough," Dr. Kurian said. She suggested that coordinated care among surgeons, gastroenterologists, dietitians, behavioral therapists, and others will provide the road forward even if the next set of surgical procedures or endoscopic devices are incrementally more effective than current options for weight loss.

One reason that a single intervention may not be enough is that obesity is not a single disease but the product of multiple different pathologic processes, according to Dr. Kaplan. This is supported by the varied response to current therapies. He produced a variety of examples, which showed that, although there are large weight reductions with the most successful therapies, some patients are exceptional responders, while a proportion of patients lose little or no weight and others actually gain weight. He expressed doubt that there will be a single solution applicable to all patients.

"The goal is to match each patient with the therapy that is most appropriate and productive for them," Dr. Kaplan said.

GIs are uniquely positioned to lead a care team to help patients with obesity achieve a healthy weight. The POWER (Practice Guide on Obesity and Weight Management, Education and Resources) white paper provides physicians with a comprehensive, multidisciplinary process to guide and personalize innovative obesity care for safe and effective weight management. Learn more at www.cghjournal.org/article/S1542-3565(16)309880/fulltext.

VIDEO HIGHLIGHTS

It is an exciting time in obesity treatment

BY LORA T. MCGLADE

For those in obesity treatment, things are looking up, said Reem Z. Sharaiha, MD, MSc, in a video interview at the AGA Tech Summit. There are several new therapies to choose from, said Dr. Sharaiha, assistant professor of medicine at Cornell University, New York – and a variety of therapies coming down the pipeline. The key is to choose the right treatment, or right combination of treatments – surgical, endoscopic, or medical – for the right patient at the right time and to follow up. Obesity is a chronic disease that needs long-term, team treatment. With obesity treatments there is sometimes a trade-off between risk and results, but the innovations coming along may balance that risk-results equation for some patients, she said.

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To see a video interview with Dr. Sharaiha, go to mdedge.com/gihepnews/aga-tech-summit.

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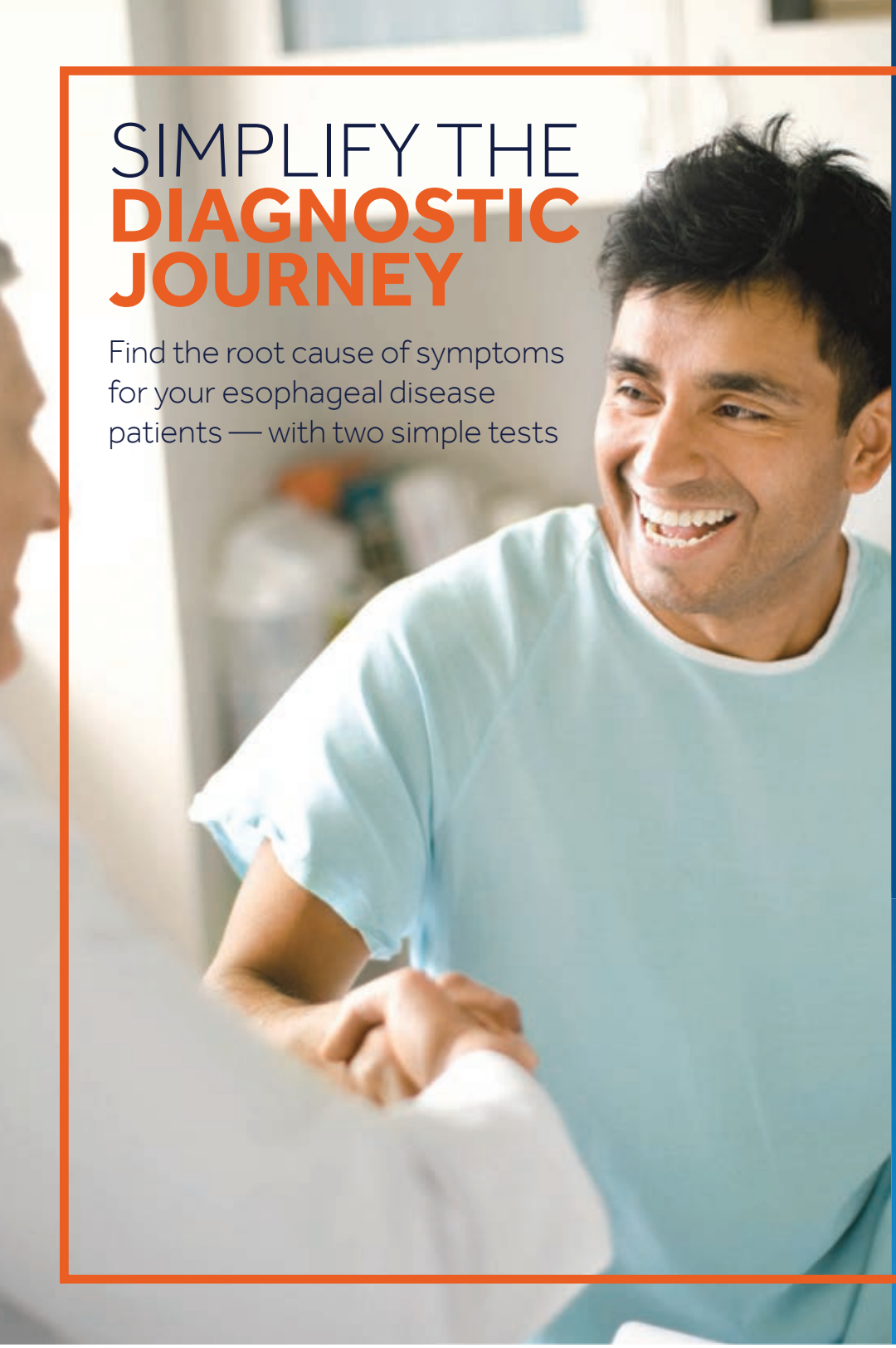

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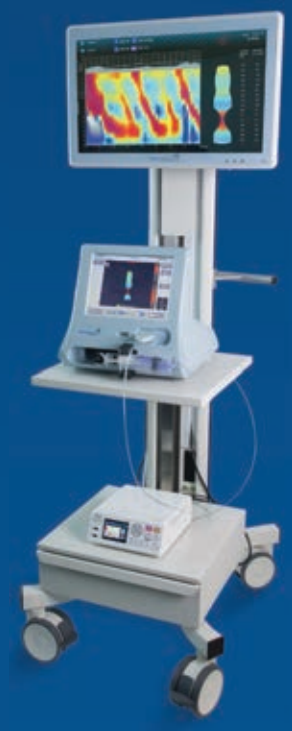

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Infection risk from reprocessed duodenoscopes is low, but goal is zero

BY TED BOSWORTH

Once attributed to human error, the outbreaks of infection from persistent contamination of reprocessed duodenoscopes have eluded an easy fix, according to three experts addressing the problem at the 2018 AGA Tech Summit. This session is part of the AGA Center for GI Innovation and Technology's ongoing efforts to convene stakeholders, including endoscope manufacturers and the FDA, and to collaborate on a solution to ensure zero device-transmitted infections.

Since the problem first was recognized, changes in device design and cleaning protocols have produced a five-fold reduction in the risk of infection.

"The risk is now very low and well beneath the benefits provided by endoscopy, but we will not settle for anything less than complete resolution of the problem," said David R. Lichtenstein, MD, the director of the endoscopy program at Boston University. Leading off a program that outlined the problem and possible solutions, Dr. Lichtenstein said, "We need to make this a historical issue."

After scrutiny by the many stakeholders, including the manufacturers, gastroenterologists, and regulatory agencies, the elevator mechanism has remained one focus of concern. The difficulty of cleaning this mechanism was recognized in the earliest devices, but redesigns that permitted these channels to be flushed did not resolve the problem completely. In the AGA Tech Summit symposium, there was general consensus that even dedicated reprocessing technicians who are fully adherent to current protocols cannot reliably completely clean the currently available duodenoscopes in every case.

"In most instances, it is not the technician at fault. There is essentially nothing that will get a flexible scope clean after a messy procedure," explained Cori Ofstead, MSPH, an epidemiologist and president of Ofstead & Associates. In one of her studies in endoscopes that had been reprocessed using best practice recommendations, microbial presence could still be detected.

Although risk of contamination increases with repeated use of scopes, with damaged scopes, and after scopes have been used in procedures that generate relatively high amounts of debris, Ms. Ofstead said, "If you look, you will find contamination." While she emphasized the importance of developing incentives that reward quality over efficiency when attempting to reduce human error in duodenoscope decontamination, she, like Dr. Lichtenstein, believes new strategies are needed to achieve the complete elimination of infection risk.

Possible design solutions include removable elevators and removable distal caps.

"Disinfection simply may not be enough," Ms. Ofstead said. "The solution is likely to be something else, such as single-use scopes or sterilization."

Michael L. Kochman, MD, the Wilmott Professor of Medicine and the director of the Center for Endoscopic Innovation, Research and Training at the University of Pennsylvania, Philadelphia, as well as a past chair of the AGA Center for GI Innovation and Technology, cautions that reprocessing and then sterilization may not be sufficient because the cleaning that occurs prior to high-level disinfection or sterilization is the single most important step during reprocessing.

Explaining how processes of sterilization and disinfection differ, David Weber, MD, a professor of epidemiology at the University of North Carolina, Chapel Hill, outlined the relative advantages and disadvantages of current options. Dr. Weber, who has been involved in numerous studies regarding duodenoscope decontamination, emphasized that rigorous cleaning of biological debris is a central tenet of any solution, but he outlined evidence that the current standard of high-level disinfection has not been sufficient to bring the infection risk to zero.

"There is no simple answer because every solution so far has introduced some challenges," Dr. Lichtenstein observed. Listing some examples, he noted that the heat involved in autoclaving risks damaging some device components, that some proposed sterilization techniques are associated with a risk of toxicity to technicians or patients, and that disposable devices or parts may involve unacceptable costs. However, he is convinced there is a solution.

"The problem is being addressed at different angles, and I think we will find the solution in the next couple of years. This may involve a series of additional incremental improvements, but I think no one with a stake in this issue will sit comfortably until it is no longer a problem," Dr. Lichtenstein said.

According to Dr. Kochman, potential innovations to endoscope design include removable elevators, removable distal caps, and innovations to cleaning and reprocessing. These innovations, he said, have the potential to bring the risk of endoscope-transmitted infections to zero.

Dr. Kochman added, "AGA will build on the relationships that we have with the manufacturers of the endoscopes along with companies developing other novel approaches to reprocessing, as well as the FDA and CDC, to further the discussion. Ultimately, we hope to see the availability of devices that are effective and reliably clean so that we do not have to be concerned about patient-to-patient transmission of infection."

Therapeutic endoscopy expands reach to deep GI lesions

BY MICHELE G. SULLIVAN

Endoscopic resection of gastrointestinal tumors that arise from the muscularis propria is feasible, but the techniques are challenging and require a sure hand with closure techniques.

"The main difficulty with these procedures is closure," Mouen A. Khashab, MD, said at the AGA Tech Summit. "Sometimes you can create a large defect that you're not sure you can close. You must have experience with large defect closure."

In experienced hands, the endoscopic approaches spare adjacent large organs, have a complete resection rate approaching 95%, and an acceptable rate of adverse events. They can provide excellent surgical specimens that are more than adequate for histologic studies, although some cannot provide any information on margins, said Dr. Khashab, director of therapeutic endoscopy at Johns Hopkins University, Baltimore. "When doing a full-thickness endoscopic resection, you can't comment on the margins. You're not getting any normal tissue around the tumor, and this can create an issue with some patients."

Dr. Khashab briefly described three endoscopic resection techniques that are suitable for the following deep GI tumors:

- **Submucosal tunneling endoscopic resection.** STER is most suitable for smaller tumors (4 cm or less). Tumors of this size are easily removed en bloc via the endoscopic tunnel. Larger tumors also can be resected this way, but need to be removed piecemeal after dissection off the muscle layer. This is an acceptable alternative in leiomyomas but not in gastrointestinal stromal tumors. "For this technique, you introduce the scope into the submucosal layer and create a space with tunneling," Dr. Khashab said. "We then expose the tumor, dissect it off the wall of the muscularis propria (MP), and pull it out of the tunnel." A 2017 meta-analysis examined outcomes in 28 studies with data on 1,085 lesions. The pooled complete resection and en bloc resection rates were 97.5% and 94.6%, respectively. Common complications associated with STER were air leakage symptoms (15%) and perforation (5.6%). "The perforation rate is reasonable, I think. A lot of these complications can be managed intraoperatively with clipping or suturing," Dr. Khashab noted.
- **Endoscopic submucosal dissection:** ESD is now being used to resect tumors that originate from the MP. "This is something I didn't used to think was even possible," Dr. Khashab said. "But we are seeing some literature on this now. A lot of these tumors originate from the superficial MP, so we can dissect off the muscle without needing a full-thickness resection." He presented findings from a large study comprising 143 patients with submucosal gastric or esophageal tumors that arose

Continued on following page

VIDEO HIGHLIGHTS

Organ-sparing resection techniques should be way of the future

BY LORA T. MCGLADE

Organ-sparing resection techniques that remove lesions from the esophagus, stomach, and colon are being developed, Amrita Sethi, MD, said in a video interview at the 2018 AGA Tech Summit.

Dr. Sethi, an assistant professor of medicine at Columbia University Medical Center, New York, said these techniques improve patient outcomes by maintaining organ integrity, whereas older techniques often led to removal of large amounts of tissue around lesions. And while organ-sparing techniques reduce recovery time and hospital stays, training and reimbursement for these procedures remain problematic. New endoscopic package devices are needed from industry to make these procedures easier, artificial intelligence is needed to help make the decisions on when these techniques are applicable. Reimbursement structures are needed so that these procedures make financial sense, she noted.

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To see a video interview with Dr. Sethi, go to mdedge.com/gihepnews/aga-tech-summit.

We live in a health care system now, Dr. Sethi said, in which benign polyps of the colon are being sent for surgical resection when what is really needed is referral for more advanced endoscopic treatment. This is a matter of training, and perhaps, showing through comparative trials that organ-sparing techniques cost less and improve patient outcomes.

Update on AGA-Medtronic Research and Development Pilot Award in Technology

BY KAREN BLUM

It's been just a year since Bani Chander Roland, MD, FACG, was awarded the 2017 AGA-Medtronic Research and Development Pilot Award in Technology from the AGA Research Foundation, and her team already has recruited 30 patients with irritable bowel syndrome (IBS) and small intestinal bacterial overgrowth (SIBO) for a study of the gut microbiome and functioning. Interim data from her grant will be presented at Digestive Disease Week® 2018 in June in Washington as a poster of distinction.

Dr. Roland and her team are testing the hypothesis that IBS and SIBO result from several distinct pathophysiologic mechanisms, each of which are associated with their own distinct microbial and inflammatory profile. For the study, they are using the Wireless Motility Capsule (WMC, SmartPill) to assess alterations in gastrointestinal pathophysiology in patients with suspected IBS and SIBO – just the sort of innovative technology that the AGA Center for GI Innovation and Technology has fostered. They also are obtaining microflora from oropharyngeal, gastric, small bowel, and fecal samples for DNA sequencing. In addition, the team is beginning to study serum samples to test the hypothesis that patients with IBS and SIBO have increased expression of pro-inflammatory markers compared to those with only IBS; they are attempting to correlate the inflammatory markers to specific bacteria.

"IBS is a very common gastrointestinal disorder, and we're continuing to see an increase in prevalence in Western countries, without understanding the etiology for this syndrome," said Dr. Roland, director of gastrointestinal motility at Lenox Hill Hospital and Northwell Health System in New York. "Unfortunately, we don't have any specific or targeted therapies for this patient population because the underlying physiological mechanisms that cause IBS are not very well understood. When we treat these patients with antibiotics, often their symptoms come right back. If we can target the causes of disease in subsets of these patients, we may be able to successfully treat them."

> **"If we can target the causes of disease in subsets of these patients, we may be able to successfully treat them."**

"We're very excited to see what changes in the microbiome exist in this patient population, to determine if the microbiome may be another potential area that we can target for treatment," she added.

In data to be presented in the DDW poster, Dr. Roland's team used the SmartPill to measure the gastrointestinal transit times, pH, and ileocecal junction pressures of patients with IBS and SIBO as compared to patients with IBS without evidence of SIBO. "Interestingly, patients who had IBS and SIBO had significantly higher contraction frequency in the stomach and small bowel compared to patients with IBS alone," Dr. Roland said. Those with both conditions also had lower ileocecal junction pressures. "These are physiological mechanisms that have not been well understood before," Dr. Roland said. "We have been able to begin delineating some of the underlying physiological mechanisms in this challenging patient population for the first time, using a noninvasive, wireless motility capsule."

Dr. Roland's team is now partnering with the hospital's endocrinology division to compare the circulating inflammatory markers in patients with IBS and SIBO, such as TNF (tumor necrosis factor)–alpha and IL (interleukin)-6, to patients with IBS alone. They will use their data to apply for future funding.

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from the muscularis propria at the esophagogastric junction. These were large lesions, a mean 17.6 cm, but they ranged up to 50 cm. The en bloc resection rate was 94%. There were six perforations (4%), along with four pneumoperitoneum and two pneumothorax, which resolved without further surgery. There were no local recurrences or metastases when the 2012 study appeared, with a mean follow-up of 2 years.

- **Endoscopic full-thickness resection:** EFTR "is a technically demanding procedure, and we frequently have to work on these tumors in retroflexion," Dr. Khashab said. He referred to a 2011 paper, which described the EFTR technique used in 26 patients with gastric cancers. The tumors (mean size, 2.8 cm) were located in the gastric corpus and in the gastric fundus. Although the procedures were lengthy, ranging from 60 to 145 minutes, they were highly successful, with a 100% complete resection rate. Nevertheless, there was also a 100% perforation rate, although all these were closed intraoperatively. There was no postoperative gastric bleeding, peritonitis sign, or abdominal abscess. No lesion residual or recurrence was found during the 6-24 month follow-up period.

Dr. Khashab is a consultant and medical advisory board member for Boston Scientific and Olympus.

CGIT intensifies efforts to put new technologies into the hands of clinicians

BY TED BOSWORTH

There is no change in the core mission of the AGA's Center for GI Innovation and Technology (CGIT) since new chair and vice chair took over the leadership last year. As always, the goal is to support the development and adoption of new technologies for the treatment of digestive disorders. However, the chairs want to do more to identify and dismantle the obstacles that slow the process.

"Innovators face challenges at every stage, from attracting investors to refining an idea into a viable clinical tool. Even once a device has obtained regulatory approval, issues of training and reimbursement can keep a good idea from improving patient care," explained V. Raman Muthusamy, MD, AGAF, director of interventional endoscopy and general GI endoscopy, at the University of California, Los Angeles, and chair of the CGIT. "We want to identify these obstacles and use the CGIT resources to provide solutions."

His CGIT vice chair, Sri Komanduri, MD, AGAF, an associate professor in the division of gastroenterology and hepatology at Northwestern University, Chicago, agrees. "CGIT was set up to foster collaboration between stakeholders in new technology, but we have been increasingly concerned about the roadblocks that keep important technology from getting into the hands of clinicians," Dr. Komanduri said at the 2018 AGA Tech Summit. "In addition to the role that the CGIT has played in bringing together interested parties, we are taking a closer look at how we can help accelerate both the processes of development and implementation once the technology is available."

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Dr. Komanduri and Dr. Muthusamy

One strategy is to expand the presence and activities of CGIT. Established in 2010, the CGIT is best known for the AGA Tech Summit, which has been an important event for bringing together innovators, investors, clinicians, and those involved in navigating regulatory issues, but Dr. Komanduri said that he and Dr. Muthusamy are working to make the summit "more of a launching point" for ideas and projects that follow the meeting.

To help focus the mission of the CGIT, six areas of concentration have been identified. These are colorectal cancer screening and diagnosis, endoscope reprocessing, weight loss interventions, interventional endoscopy platforms, antireflux devices, and tissue resection technologies, according to Dr. Muthusamy. These focus areas do not preclude CGIT involvement in other types of innovations, but Dr. Muthusamy said this list helps emphasize strengths for those who do not yet consider CGIT a resource.

"We want to intersect better with the AGA members who think CGIT is not relevant to them because they are not involved in the development of new technology," Dr. Muthusamy said. In drawing attention to these specific areas, Dr. Muthusamy said.

Do you have an idea to improve the practice of GI?

The AGA Center for GI Innovation and Technology would like to connect with physician innovators. Drop us a line at cgit@gastro.org and tell us what you're working on. We can help — whether it be getting you feedback on your idea, connecting you with stakeholders, or just giving you encouragement to participate in the annual AGA Shark Tank.

Save the Date for the 10th Annual AGA Tech Summit

We invite all those interested in innovation in the GI space to join us at our 10th annual AGA Tech Summit, taking place April 10-12, 2019, at the Mark Hopkins Intercontinental in San Francisco, CA. No matter where you are in the process of innovation, this meeting will provide connections and inspiration that can't be found elsewhere. Stay tuned to techsummit.gastro.org for details.

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