Changing the Paradigm for Patients With Treatment-Resistant Depression

The U.S. Food and Drug Administration on March 5 approved SPRAVATO™ (esketamine) CIH nasal spray for the treatment of treatment-resistant depression. Dennis S. Charney, MD, Anne and Joel Ehrenkranz Dean, Icahn School of Medicine at Mount Sinai, is a co-inventor of a method of treatment, which is patented and part of the drug application for SPRAVATO, a product of the Janssen Pharmaceutical Companies of Johnson & Johnson.

“As a researcher, you strive to come up with new treatments for the patient, especially in terms of finding answers to the most debilitating diseases,” says Dr. Charney, who is also President for Academic Affairs, Mount Sinai Health System. “To know that you oversaw the early development of an approach that can make a difference in the lives of countless individuals is extremely rewarding.”

Esketamine represents the first new mechanism of action in decades to treat major depressive disorder. Delivered in the form of a nasal spray, esketamine works differently than the three classes of antidepressants that are currently on the market. The drug works on the N-methyl-D-aspartate (NMDA) receptor, an ionotropic glutamate receptor in the brain. In contrast, widely used antidepressants target different neurotransmitters—serotonin, serotonin and

Study Is Customizing Artificial Pancreas for Pregnancy

An artificial pancreas system tailored to the specific, and daunting, challenges faced by pregnant women with type 1 diabetes is the goal of a study to be conducted by a consortium of four leading institutions, including the Icahn School of Medicine at Mount Sinai. The project, funded by the National Institutes of Health, is the first of its kind in the United States. “Pregnant women with type 1 diabetes typically test their blood sugars seven to eight times per day, and many wear glucose sensors, but they still struggle tremendously to keep their blood sugar levels in target ranges,” says Carol J. Levy, MD, Clinical Director of the Mount Sinai Diabetes Center, and the project’s principal investigator at the Icahn School of Medicine. If blood sugar levels are too low

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From left: Carol J. Levy, MD; Camilla Levister, NP; Co-Investigator Grenye O’Malley, MD, Assistant Professor of Medicine (Endocrinology, Diabetes and Bone Disease); and Clinical Research Coordinator Selassie Ogyaadu, MD, MPH.
norepinephrine, and norepinephrine and dopamine—and can take weeks or even months to work.

An estimated 50 percent of people who are treated for depression do not respond to therapies. Treatment-resistant depression (TRD) is a devastating disease that is associated with greater morbidity, higher health care costs, and various comorbid conditions.

“We commend Dr. Charney and his colleagues for their work in changing the paradigm for patients with treatment-resistant depression,” says Kenneth L. Davis, MD, President and Chief Executive Officer of the Mount Sinai Health System. “Through his commitment to innovation and science, Dr. Charney has inspired countless researchers to leverage new technologies and create discoveries to benefit the lives of patients around the world—while at the same time leading the Icahn School of Medicine to unparalleled growth and high national rankings.”

In his role as Dean of the Icahn School of Medicine, Dr. Charney says that many younger researchers look to him for advice. “I tell them that in science you’ve got to keep trying, to keep pushing,” he says. “There is a lot to be gained by working in a small group that is engaged in the give and take of scientific interaction. Researchers should understand that failure is going to happen, but they can use that failure as a stepping stone to discovery.”

White Coat Event Inspires Nursing Students

The Phillips School of Nursing at Mount Sinai Beth Israel recently held its second annual White Coat Ceremony for nursing students in the Accelerated Bachelor of Science in Nursing program. The event, held on Tuesday, February 5, at Stern Auditorium, was designed to instill a commitment to providing compassionate care among the next generation of registered nurses.

The White Coat ceremony, long a rite of passage at medical schools, was introduced to nursing in 2014, said Elizabeth Cleek, PsyD, Chief Program Officer and Vice President of the Arnold P. Gold Foundation, a sponsor of the event. Dr. Cleek advised the students in the years ahead “to take that extra moment—despite the pressures, despite the new technologies that may hold some of the answers—to be fully present with the person or people in front of you.”

During the ceremony, each student was cloaked with a white coat provided by the School of Nursing and received a pin with a gold Mobius loop from the Gold Foundation that symbolizes the continuous bond of trust, respect, and communication that connects nurses with their patients. “I leave you with this quote by Maya Angelou,” said the keynote speaker, Laly Joseph, DVM, DNP, APRN, Senior Associate Dean of the Phillips School of Nursing. “‘They may forget your name, but they will never forget how you made them feel.’” Todd F. Ambrosia, DNP, APRN, FNAP, Dean of the Phillips School of Nursing, closed the ceremony by reminding students that “while nursing is rooted in knowledge and evidence-based practice, it is equally rooted in caring for the whole person, and not just an illness.” He also encouraged them “to always care for yourselves and for each other.”
Continuity of Cardiac Care for South Nassau Patients

Even before an official partnership was finalized in December 2018, specialists from the Mount Sinai Health System were collaborating with physicians at South Nassau Communities Hospital to provide advanced and coordinated care to Long Island patients. For 67-year-old Bill Regan, a retired financial services executive from Massapequa, this new relationship proved to be life-saving.

It was in March 2018 that Mr. Regan decided to try a new primary care physician—this time, at South Nassau Primary Care at Bellmore. During his first visit to Carolyne McHyman, DO, Mr. Regan provided the details of his medical history, which included a carotid endarterectomy, a surgical procedure to clear blockages in the carotid artery in the neck, and prescriptions for high blood pressure and high cholesterol. The former long-time smoker told Dr. McHyman that he was “generally in good health,” but when he also mentioned some daytime fatigue and left leg discomfort when he walked long distances, she ordered several diagnostic tests.

They included a chest CT scan, as part of The Mount Sinai Hospital’s Early Detection Lung Cancer Screening program; an ultrasound of the abdominal aorta to check circulation and to rule out an aortic aneurysm, an abnormal bulge in the aorta; a consultation to rule out a sleep disorder; and a recommendation to see his cardiologist, Pilar Stevens-Haynes, MD, for an evaluation.

The CT scan of the lungs, while negative for lung cancer, showed calcification in his aorta. The ultrasound of the abdominal aorta also showed narrowing of the left iliac artery in his pelvis, while a magnetic resonance angiography, which provides detailed images of blood vessels in the body, revealed a 90 percent blockage of that artery. “Honestly, I didn’t worry about my health, but these test results blindsided me,” recalls Mr. Regan.

Meanwhile, Dr. Stevens-Haynes recommended a cardiac catheterization to check for any blockages of his coronary arteries. “Bill didn’t have previous symptoms of chest pain, but coronary artery calcification can be associated with major adverse cardiovascular events, and

Study Is Customizing Artificial Pancreas for Pregnancy (continued from page 1)

for a prolonged period of time, a pregnant woman can feel poorly, or pass out, and risks seizures. If levels rise too high, there are risks to her unborn child, including malformations, delayed lung maturity, placental malfunction, or fetal death. “The use of customized technology provides an important opportunity to improve patient and fetal outcomes,” says Dr. Levy, Associate Professor of Medicine (Endocrinology, Diabetes and Bone Disease), Icahn School of Medicine at Mount Sinai. “We are excited to be part of the team evaluating this important area of research designed to improve care and reduce patient burden.”

The clinical trials will be conducted by specialists at three sites: Mount Sinai; the Mayo Clinic in Rochester, Minnesota; and the Sansum Diabetes Research Institute in Santa Barbara, California. The overall principal investigator is Eyal Dassau, PhD, an expert on algorithm design and Director of the Biomedical Systems Engineering Research Group at Harvard University’s John A. Paulson School of Engineering and Applied Sciences. Each patient participating in the artificial pancreas portion of the study will wear a Dexcom G6 continuous glucose monitoring device and an insulin pump. Both devices are linked with a software algorithm on a smartphone, which identifies a personalized blood-glucose range and prompts doses of insulin with reduced input from the patient. This is also known as a closed loop system because it uses a customized algorithm to close the decision-making loop between the glucose reading and the delivery of insulin, with the goal of improving blood sugar control.

The only artificial pancreas approved by the U.S. Food and Drug Administration is the Medtronic 670G. But it is designed for blood glucose targets between 120 milligrams/deciliter (mg/dL) and 180 mg/dL, while pregnant women with type 1 diabetes aim for a narrower range—under 90 mg/dL while fasting and 120 to 140 mg/dL one hour after meals. “This is not easy to do, even for the most meticulous patients,” says Dr. Levy. Another challenge is that hormonal shifts in each trimester change the level of resistance to insulin, making the proper dose “a moving target.”
Long Island patient Bill Regan was able to receive postoperative care, including cardiac rehabilitation, close to home in South Nassau.

heart and the arteries, and he was positive, calming, and reassuring. He made me feel like 'we got this and this is what we do every day.'

On April 30, Dr. Varghese and his team at The Mount Sinai Hospital performed the three-hour surgery to restore blood flow to Mr. Regan's heart. “After surgery, we took Bill to our Cardiac Surgery Intensive Care Unit,” says Dr. Varghese, who is also Director of Cardiovascular Critical Care for the Mount Sinai Health System. “He was sitting up in the chair in no time and looking great. He surprised us all.” Within four days, Mr. Regan was released from the hospital and was back home on the South Shore under the supervision of South Nassau's Homecare program, attending church two days later in Massapequa.

“L
y entire experience was coordinated and supported by the most wonderful people from South Nassau and Mount Sinai,” says Mr. Regan. “I feel blessed, thankful, and overwhelmed with gratitude to everyone, and I mean everyone, involved in my treatment and recovery at South Nassau and Mount Sinai.”

After he was released from South Nassau's Homecare program, vascular surgeon Xenophon Xenophontos, MD, performed a successful angioplasty of the left iliac artery. Mr. Regan also participated in South Nassau's Cardiac Rehabilitation program at South Nassau's Sports Medicine and Rehabilitation Therapy (SMART) Center in Oceanside, which he completed three months ago. Mr. Regan says he plans to return to the SMART Center this month for additional exercise programs.

Having access to advanced specialty care at The Mount Sinai Hospital while being able to stay close to home for pre- and postoperative care offers many benefits for patients. “Continuity of care is a key component of quality of care, especially when treating patients with multiple conditions,” says Adhi Sharma, MD, Executive Vice President for Clinical and Professional Affairs and Chief Medical Officer at South Nassau. “The care was not only life-saving for Bill, but a seamless journey and patient experience.”

The first clinical trial in the grant—Longitudinal Observation of Insulin Requirements and Sensor Use in Pregnancy (LOIS-P)—is now enrolling 50 pregnant women with type 1 diabetes and will follow their glycemic outcomes into the postpartum period, providing guidance in refining the algorithm. The trial is named for the late Lois Jovanovic, MD, who was a former director of the Sansum Institute and a role model for many in the study of diabetes, including Dr. Levy. The overall project is intended to progress from a sequence of in-clinic studies to a safe and effective at-home clinical trial.

“I view this work as critical for patients, and I have a personal perspective as well, since I have had type 1 diabetes for 48 years,” Dr. Levy says. “I managed my diabetes with my health care team through two pregnancies, and every day was a challenge. Caring clinicians are important, and any support that people with type 1 diabetes can have provides a huge difference. Every time I enroll a patient in the LOIS-P study, I feel as if we are one step closer to a real answer for many women.”

For more information about the clinical trials, call 212-241-9089.
A Celebratory Reunion for Pediatric Patients

Pediatric cardiology patients enjoyed popcorn, cotton candy, and face-painting at the 33rd Annual Valentine’s Reunion Party held on Wednesday, February 13, in the Annenberg West Lobby. The carnival-themed event brought children and their families together with the doctors, nurses, and medical staff who previously administered vital care. Organized by the Children’s Heart Center—located within Mount Sinai Kravis Children’s Hospital and part of an alliance with Children’s Hospital of Philadelphia—the festivities were also supported by the nonprofit organizations Project Sunshine, Harboring Hearts, and the Congenital Heart Defect Coalition. “It is amazing to see the kids we take care of outside the clinical setting,” said Peter Pastuszko, MD, Co-Director of the Children’s Heart Center, and Chief of Pediatric Cardiac Surgery and Director of Pediatric Cardiovascular Services for the Mount Sinai Health System. “We may see some patients only once or twice after they are discharged. Parties like this are the best chance to see the results of our care and what we have been able to give them. It is incredibly rewarding.”

A Lesson in Heart-Healthy Eating

Dozens of interested individuals stopped by a healthy-cooking demonstration in the Plaza Café on Thursday, February 28, during Heart Health Month. Jane Maksoud, RN, MPA, Chief Human Resources Officer and Senior Vice President, Human Resources, Mount Sinai Health System; Annapoorna S. Kini, MD, the Zena and Michael A. Wiener Professor of Medicine and Director of the Cardiac Catheterization Laboratory, The Mount Sinai Hospital; and Mary Ann McLaughlin, MD, MPH, Medical Director, Cardiac Heart Program, Mount Sinai Health System, created tasty heart-healthy and plant-based meals. Attendees sampled the selections and received a copy of the Mount Sinai Fit Cookbook – 2018. Recipes are available online at mountsinai.org/mswellness.

Keeping Healthy in Palm Beach, Florida

The Mount Sinai Health System teamed up with the Mirasol Foundation in Palm Beach County, Florida, to host the Gate-to-Gate Walk and Run, an energetic heart-healthy event held on Sunday, February 17. Mount Sinai serves this community with four practices offering specialty care in cardiology, dermatology, gastroenterology, ophthalmology, primary care, and pulmonology.
**Venture Team Networking Mixer**

Meet new partners for your innovative endeavors. This event will offer two styles of networking—speed networking and networking booths—for start-ups to recruit team members. *All innovators are welcome to attend.*

Thursday, March 21
4:30 pm
Hess Center for Science and Medicine
Seminar Room B

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**Center for Bioinformatics Seminar Series**

Lars Juhl Jensen, PhD, Professor, Novo Nordisk Foundation Center for Protein Research, University of Copenhagen, presents "Network Analysis and Visualization with STRING and Cytoscape."

Tuesday, March 19
2 - 3 pm
Annenberg Building, Conference Room, 19-79

**Grand Rounds / Medical Education**

Mercedes Perez-Rodriguez, MD, PhD, Assistant Professor, Psychiatry, presents "Challenges and Strategies to Recruit, Train, and Retain Physician Scientists."

Wednesday, March 27
Noon - 1 pm
Hess Center for Science and Medicine, Room 9-101

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**Grand Rounds / Neurology**

Vincent Martin, MD, Professor of Clinical Medicine, University of Cincinnati College of Medicine, and President of the National Headache Foundation, presents the annual George Forster Memorial Lecture, “Ehlers Danlos Syndrome and Intracranial Hypotension.”

Friday, March 29
8 - 9 am
Hess Center for Science and Medicine, Seminar Room B

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**Grand Rounds / Advanced Practice Providers (APP)**

A special event for advanced practice nursing and physician assistants titled "Leadership for APPs—A Primer."

Presentations by Brijen Shah, MD, Medical Director for Quality, Mount Sinai Health System; Heather Isola, MPAS, PA-C, Director of Physician Assistant Services, Mount Sinai Health System; and William Bodeker, MS, FNP-BC, CEN, CCRN, Senior Director, Advanced Practice Nursing, The Mount Sinai Hospital.

Monday, April 8
Noon - 2 pm
Hatch Auditorium

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**The Apothecary Magazine Welcomes Submissions**

*The Apothecary is a student-run creative arts magazine dedicated, but not limited to, the gravity of health, illness, and healing. It is based at the Icahn School of Medicine at Mount Sinai and welcomes submissions from anyone (not only students) in fiction, creative nonfiction, and poetry, as well as visual, audio, or performative art.*

To learn more and to submit your work, visit https://theapothecary-mssm.org. Submissions are open until Wednesday, May 1.

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**Second Annual Kidney Cancer and Kidney Health Fair**

Learn about kidney cancer, kidney health, and robotic kidney surgery—within a March Madness basketball atmosphere. Stop by for educational hand-outs, and while there, enjoy snacks and join the competitive “Free Throw Challenge.” Dennis S. Charney, MD, Anne and Joel Ehrenkranz Dean, Icahn School of Medicine at Mount Sinai, and President for Academic Affairs, Mount Sinai Health System, will open the event.

Wednesday, March 27
11 am - 2 pm
Guggenheim Pavilion

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**“MENTORS VS. SPONSORS”**

This two-hour program aims to help participants gain insight and wisdom to create actionable steps to develop mentor and sponsor relationships for career mobility. Contact diversity@mountsinai.org for more information. *Hosted by the Office for Diversity and Inclusion and the Mount Sinai Queens Diversity Council.*

Friday, March 29
11:30 am - 1:30 pm
Mount Sinai Queens
Administrative Conference Room

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The Mount Sinai Health System complies with applicable Federal civil rights laws and does not discriminate, exclude, or treat people differently on the basis of race, color, national origin, age, religion, disability, sex, sexual orientation, gender identity, or gender expression.