MAYO CLINIC

PsychUpdate

Psychiatry and Psychology News From Mayo Clinic

Vol. 3, No. 2, 2011

Repetitive Transcranial Magnetic Stimulation Provides a Safe, Effective Alternative for Some Adolescents With Major Depressive Disorder

INSIDE THIS ISSUE

A study conducted at Mayo Clinic suggests that repetitive transcranial magnetic stimulation (rTMS) is a safe, feasible, and potentially effective therapy for adolescents with treatment-resistant major depressive disorder (MDD).

A team from the Department of Psychiatry and Psychology at Mayo Clinic in Rochester, Minnesota, led by Christopher A. Wall, MD, recently received approval from the US Food and Drug Administration (FDA) and 3 grants to study the adjunctive use of rTMS in adolescents. "We believe our previous study is the first rigorously standardized US trial of rTMS for depressed adolescents," says Dr Wall. "Previous studies have been conducted in Australia and Israel, but the dosing used in those trials was variable and less than adult dosing levels. We felt it was important to use adult treatment parameters to give kids the best chance for treatment benefit."

Points to Remember

- Previous trials of repetitive transcranial magnetic stimulation (rTMS) in depressed adolescents used less robust treatment parameters than the initial multicenter rTMS study led by Mayo Clinic.
- TMS treatment dosing consistent with adult protocols was found to be safe, feasible, and effective in this group of adolescents.
- Treatment benefits of rTMS in adolescents appeared durable at the 6-month follow-up visit.

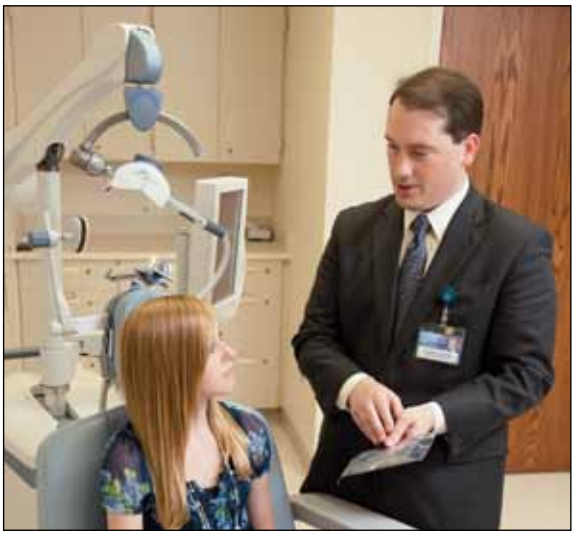

Figure. *Christopher A. Wall, M.D. discusses repetitive transcranial magentic stimulation with a patient.*

Children and Parents Report Improvement

Recently, an initial multicenter trial led by Mayo Clinic (including Rush University and University of Texas Southwestern Medical Center) was conducted with 8 adolescents who had MDD that had not responded sufficiently to 2 adequate antidepressant medication trials. Participants were treated with a stable dose of a selective serotonin reuptake inhibitor during the trial and they received 30 daily rTMS treatments given 5 days per week over 6 to 8 weeks. Dosage was 3,000 stimulations per treatment session at 120% of the motor threshold.

All participants continued to receive their medications during the treatment period and all participants received the treatment. "This was an open trial, so no placebos were used," notes Dr Wall. "All of the kids and their parents knew they were receiving the active treatment."

The possibility of provoking seizures in adolescent patients was a consideration, but no adverse events occurred. Initial outcomes indicate that the treatment is safe and well tolerated. The adolescent participants also seemed to respond more briskly to treatment than the adults who participated in previous trials.

Of the 8 trial participants, 7 completed the

Continuous Professional Development: Psychiatry in Medical Settings

January 26-28, 2012,
in Phoenix, Arizona

This course reviews principles of psychiatric diagnosis and the management in medical-surgical inpatient and outpatient settings for patients with depression and anxiety disorders who have comorbid medical illnesses, delirium, and behavioral disturbances associated with dementia, psychophysiological disorders, and mood and anxiety disorders during pregnancy and the postpartum period.

For more information or to register, visit www.mayo.edu/cme/psychiatry-and-psychology.

full course of treatment and 5 of the 7 reported improvement initially and at the 6-month follow-up visit. "The 7 participants who received all 30 treatments have said they would do it again and so did their parents," says Dr Wall. "Interestingly, the treatment effects lasted when measured 6 months after the final session."

2011 Trial Uses MRS

Dr Wall and Mayo Clinic received a second investigational device exemption from the FDA in July 2011. The new trial for use of rTMS for adolescents with MDD, started in September, uses the same treatment parameters and treats at the same location as the initial trial.

In the new study, however, researchers will use magnetic resonance spectroscopy (MRS) to look at participants' brains before treatment, at the end of treatment, and again 6 months after the final treatment. MRS will be used to look for changes in chemical signals instead of looking at the structure of the left dorsolateral prefrontal cortex and anterior cingulate cortex. Both areas have been associated with depression and treatment response.

Dr Wall's paper about the initial trial, "Adjunctive Use of Repetitive Transcranial Magnetic Stimulation in Depressed Adolescents: A Prospective, Open Pilot Study," appears in the September 2011 issue of the *Journal of Clinical Psychiatry* (*J Clin Psychiatry*;72[9]:1263-9).

FDA Exemptions Support Clinical Trials

A significant number of adolescents who have major depressive disorder (MDD) do not benefit from currently available medications, psychotherapy, or social support treatments. Considered separately, these treatment approaches fail to provide adequate clinical improvement in approximately 40% of adolescents with MDD and produce complete remission in only 30% of adolescent patients.

In 2008, the US Food and Drug Administration (FDA) approved the use of transcranial magnetic stimulation (rTMS) for some adults with MDD. The use of rTMS for adolescents, however, is relatively understudied.

Quality of Life Differs for the Oldest Old and Their Caregivers

In 2011, Maria I. Lapid, MD, in collaboration with the Mayo Clinic Alzheimer Disease Research Center, published results of a study of quality of life among nonagenarians living in the community.

Maria I. Lapid, MD

Dr Lapid's team recruited 144 participants aged 90 years and older for their study, "What Is the Quality of Life in the Oldest Old?"

The team collected data on cognitive functioning, depressive symptoms, physical functioning, and quality of life.

All of the participants reported high overall quality of life, regardless of cognitive functioning. "What this means," says Dr Lapid, "is that the oldest old individuals endorsed a good quality of life whether they were cognitively normal or had mild cognitive impairment or dementia."

Perceptions Differ

The team also explored how their participants' self-perceived quality of life related to caregivers' perception of their patients' quality of life. "The disparity between the subjects' self-perceived quality of life and the caregivers' perception of their quality of life was interesting. Individuals perceived their quality of life to be better than their caregivers did," notes Dr Lapid. The difference in participants' and caregivers' perceptions was more pronounced for participants with dementia than for those with depression.

"Since quality of life is an individual's self-perception of their well-being, subjective ratings of quality of life are still the gold standard," says Dr Lapid. "The discrepancy, however, also indicates we should pay attention to the caregivers. They may be more affected by the situation than their patients are."

D-BART Helps Caregivers Manage Disruptive Behavior Through Realistic Expectations and Positive Reinforcement

In people with Alzheimer disease, Lewy body dementia, or frontotemporal dementia, behaviors such as agitation, paranoia, and physical aggression often replace clear verbal communication. These behaviors can be difficult to understand and challenging for both family caregivers and professional care providers.

Since 1995, Glenn E. Smith, PhD, LP, and the Mayo Clinic Dementia-Behavioral Assessment and Response Team (D-BART) have worked to reduce the frequency and severity of negative behaviors and improve mood and general quality of life for patients with dementia. "We realized that patients with dementia who have been referred out of long-term care facilities and into our psychiatric wards behave well," says Dr Smith "When they return to their care facilities, however, they regress, usually within 48 hours."

D-BART can include a licensed neuropsychologist, a medical psychiatrist, and a dementia education specialist. The team embraces the philosophy that behaviors such as agitation or aggression are influenced by physical, psychological, environmental, and social factors. "Behavior is a form of communication. As caregivers, it's our job to detect what the behavior is trying to say and work from that knowledge," says Dr Smith. "The team helps caregivers understand that they can change and adapt more readily than the person with dementia."

Virtual Consultation Increases Access

The team originally consulted with patients and their caregivers in person. In 2009, however, D-BART received funding that allows it to provide Skype-based consultation. The team either sends a laptop that includes a survey to the patient's facility or provides downloadable survey software to facilities that already use Skype technology.

The team tests the Skype link and reviews the patient's electronic medical record the day before the interview. Team members interview the patient and then the patient's family and professional caregivers to develop a clear picture of the patient's behaviors. The session culminates in a group discussion.

"Team members still consult with patients in Rochester, Minnesota, in person. D-BART can consult with up to 4 regional patients daily, though, thanks to Skype," says Dr Smith. "Virtual presence does not have an effect on outcomes, but it does increase access." The team currently sees more than 70 patients each year.

Study Confirms Success

A 2010 study of D-BART outcomes showed that after consultation, 79% of caregivers reported improvement in the patient's target behaviors, 14% saw no change, and 7% reported a worsening of behaviors (18% of patients died before follow-up and thus were not included in the results).

Treatment success for D-BART means a reduction in the frequency and severity of negative behavior. It also means that D-BART services are no longer needed. "It's an inductive teaching model. We show caregivers how to help 1 patient and they can go on to help others," says Dr Smith.

Glenn E. Smith, PhD, LP

D-BART Brings Dementia Evaluation to the Patient

Katie Ingle, CNP, knew her elderly patient needed more help than she could provide.

"His dementia was getting worse. He was becoming aggressive," says Ingle, at Mayo Clinic Health System in Cannon Falls. "I'm not a geriatric psychiatrist, and I was no longer sure what to do for him."

Ingle may not have been sure what to do, but she knew who to call. She'd heard about D-BART (Dementia-Behavioral Assessment and Response Team) at Mayo Clinic in Rochester, Minnesota.

"The team was so helpful," says Ingle. "They sent a laptop with instructions to the patient's assisted living facility. At the appointment, the patient, his daughter, and the facility staff basically Skyped with a doctor in Rochester. The patient never had to leave his environment."

After the appointment, the facility staff sent the laptop back to Mayo Clinic. Ingle received a letter outlining new treatment recommendations for the patient. The information was also available on Mayo integrated clinical systems.

"This is a great option for patients," says Ingle. "It provides access to amazing medical care while keeping people close to home."

Adapted from This Week at Mayo Clinic, *July 1, 2011.*

Mayo Clinic PsychUpdate

Medical Editors:
Mark A. Frye, MD
James R. Rundell, MD

Contact Us

Mayo Clinic welcomes inquires and referrals, and a request to a specific physician is not required to refer a patient.

Arizona
866-629-6362

Florida
800-634-1417

Minnesota
800-533-1564

Resources

mayoclinic.org/medicalprofs

- Clinical trials
- CME
- Grand Rounds
- Scientific videos
- Online referrals

In the News

J. Michael Bostwick, MD, assumed the responsibilities of Mayo Medical School Assistant Dean for Student Support Services on September 6, 2011.

Mark A. Frye, MD, was awarded The International Society for Bipolar Disorders Mogens Schou Award for Education and Advocacy. Dr Frye is chair of the Mayo Clinic Department of Psychiatry and Psychology and director of its Integrated Mood Group. His clinical interests include mood disorders, with a research focus on clinical trials, pharmacogenomics, and brain imaging. Dr Frye serves on the Scientific Advisory Committee to the Depression and Bipolar Support Alliance and is vice president of global outreach for the International Society of Bipolar Disorder.

Peter S. Jensen, MD, received the American Academy of Child & Adolescent Psychiatry's 2011 Irving Philips Award for Prevention. The award recognizes significant contributions in a lifetime career or a single seminal work to the prevention of mental illness in children and adolescents. Dr Jensen was recognized for his work with The REACH Institute, a national effort to prevent child and adolescent psychopathology through better integration of pediatric and psychiatric service delivery.

Daniel E. Rohe, MD, was honored by the American Psychological Association with its 2011 Lifetime Practice Excellence Award: Division 22, which recognizes an individual who has made an outstanding lifelong contribution to rehabilitation psychology through excellence in the clinical practice of rehabilitation psychology, in training others for clinical practice, or in setting clinical practice policy. The American Board of Professional Psychology also has honored Dr Rohe's 4 years of service (2008-2012) as president of the American Board of Rehabilitation Psychology.

Richard J. Seime, PhD, LP, was awarded the Ivan Mensh Award for Distinguished Achievement in Teaching by the Association of Psychologists in Academic Health Centers. The award recognizes professionals who provide exemplary service to the profession and are inspirational in their commitment to promoting psychological services, education, and research in academic health centers.

Mayo Clinic Joins National Network of Depression Centers

Mayo Clinic has been accepted for membership in the National Network of Depression Centers (NNDC), an organization of depression centers and academic medical centers that works to effect a transformation in the field of mood disorders, making diagnosis affordable, accessible, and acceptable.

"This is an incredible opportunity to join nearly 20 of the strongest mood programs across the United States to standardize assessment and measure outcomes in depression, whether in primary care, treatment-resistant clinics, or neurobiological or genomic endeavors," says Mark A. Frye, MD, chair of the Department of Psychiatry and Psychology.

When accepting applications for membership, NNDC considers such factors as interdisciplinary expertise, breadth of excellence, geographic distribution, and the potential for incremental contributions to the network. In its acceptance of Mayo's application, the NNDC executive committee said that "Mayo Clinic is distinguished in all of these areas and is positioned to contribute meaningfully to the work under way at NNDC."

MAYO CLINIC mayoclinic.org | 4500 San Pablo Road Jacksonville, FL 32224 | 200 First Street SW Rochester, MN 55905 | 13400 East Shea Boulevard Scottsdale, AZ 85259

MC7900-1111