Resources for Physicians

Physician Directory
View all Cleveland Clinic staff online at clevelandclinic.org/staff.

Referring Physician Center
For help with service-related issues, information about our clinical specialists and services, details about CME opportunities, and more, contact the Referring Physician Center at refdr@ccf.org, or 216.448.0900 or 888.637.0568.

Track Your Patient’s Care Online
Dr Connect is a secure online service providing our physician colleagues with real-time information about the treatment their patients receive at Cleveland Clinic. To receive your next patient report electronically, establish a Dr Connect account at clevelandclinic.org/drconnect.

Request Medical Records
216.445.2547 or 800.223.2273, ext. 52547

CME Opportunities: Live and Online
Cleveland Clinic’s Center for Continuing Education’s website offers convenient, complimentary learning opportunities, from patient simulations, webcasts and podcasts to a host of medical publications and a schedule of live CME courses. Physicians can manage CME credits using the myCME.com Web portal available 24/7. Visit ccfme.org.

Resources for Patients

Medical Concierge
For complimentary assistance for out-of-state patients and families, call 800.223.2273, ext. 55580, or email medicalconcierge@ccf.org.

Global Patient Services
For complimentary assistance for national and international patients and families, call 001.216.444.8184 or visit clevelandclinic.org/gps.

MyChart®
Cleveland Clinic MyChart® is a secure, online personal healthcare management tool that connects patients to portions of their medical record at any time of day or night. Patients may view test results, renew prescriptions, review past appointments and request new ones. A new feature, Schedule My Appointment, allows patients to view their primary physician’s open schedule and make appointments online in real time. Patients may register for MyChart through their physician’s office or by going online to clevelandclinic.org/mychart.

Outcomes Data
View clinical Outcomes books from Cole Eye Institute and other Cleveland Clinic institutes at clevelandclinic.org/quality/outcomes.

CME Opportunities: Live and Online
Cleveland Clinic’s Center for Continuing Education’s website offers convenient, complimentary learning opportunities, from patient simulations, webcasts and podcasts to a host of medical publications and a schedule of live CME courses. Physicians can manage CME credits using the myCME.com Web portal available 24/7. Visit ccfme.org.

Advanced Neuroimaging
Revealing the Underlying Neural Mechanisms of Successful ECT
Insights

IN THIS ISSUE:

NEUROIMAGING
2 Using Advanced Neuroimaging to Detect Brain Changes in Electroconvulsive Therapy for Depression
4 Case Study: A Successful Course of ECT

OUTCOMES
5 Selection Process and Psychological Outcomes in Face Transplantation

EMPOWERING PATIENTS
8 Caring for Cognition: Neuropsychology in the Cancer Clinic

BALANCING RISK
10 Fast-Acting Antidepressant for Treatment-Resistant Depression

DEVELOPING TREATMENTS
12 Deep Brain Stimulation to Modulate the Affective Component of Thalamic Pain Syndrome
14 Identifying depression in Epilepsy Patients for Better Outcomes

TOWARD WELLNESS
16 Psychosocial Predictors of Weight Loss Following Bariatric Surgery

COLLABORATIVE CARE
18 Innovative Interventions for Youth with Epilepsy: Project COPE

CAREGIVING
20 Comprehensive Care of Motor, Psychiatric and Cognitive deficits in Huntington’s Disease

ALSO INSIDE:
24 Staff Listing
24 Presentations
26 Select Clinical Trials
26 Resources for Physicians and Patients

2011 | 2012

Donald A. Malone Jr., MD
Medical Editor
Seabright McCabe
Managing Editor
Barbara Ludwig Coleman
Art Director, Designer
Sarah C. Delly
Marketing

The multidisciplinary Neurological Institute, one of 26 institutes at Cleveland Clinic, is internationally known for superior diagnosis and treatment of neurological disorders ranging from the common to the most complex. More than 300 specialists combine clinical expertise, academic achievement and innovative research to accelerate the transfer of investigational therapies unavailable elsewhere, for the benefit of adult and pediatric patients. The institute is committed to improving outcomes while treating patients with compassion and respect.

Cleveland Clinic is a nonprofit, multiprofessional academic medical center consistently ranked among the top hospitals in America by U.S. News & World Report. Founded in 1921, it is dedicated to providing quality specialized care and innovative outpatient clinic, a hospital with more than 1,300 staffed beds, an education institute and a research institute.

clevelandclinic.org
© The Cleveland Clinic Foundation 2011

Dear Colleagues,

It is my privilege to introduce this edition of Insights, featuring advances in clinical care and research within Cleveland Clinic Neurological Institute’s Center for Behavioral Health. This issue focuses on research and clinical programs we have developed and embedded into other Cleveland Clinic institutes.

At Cleveland Clinic’s Taussig Cancer Institute, Isabel Schuermeyer, MD, has formed a psychosocial oncology team, aimed at educating caregivers on the signs of clinical depression in cancer patients and reducing the time it takes for them to be seen by a mental health professional.

Kathy Coffman, MD, describes the comprehensive psychological evaluation developed for Cleveland Clinic’s groundbreaking face transplantation procedure—a process critical for both selecting candidates and predicting positive psychological outcomes.

Erik Reall, PhD, investigates advanced neuroimaging for discovering how electroconvulsive therapy changes the brain, with the aim of developing a biomarker that predicts a patient’s response to treatment.

At the Epilepsy Center, George Tesar, MD, presents an analysis of data supporting routine screening and measurement of depression in epilepsy patients to improve outcomes, and Tatiana Falcone, MD, takes psychological intervention for youth with epilepsy into the schools and community with Project COPE.

Still other advances in treatments, ranging from deep brain stimulation for thalamic pain to ketamine infusion for the relief of treatment-resistant depression, are highlighted in these pages.

In the meantime, our staff has published research in dozens of journals and presented findings at more than 50 national and international conferences, symposia and meetings this year. Their contributions continue to advance Cleveland Clinic’s leadership role in clinical research and patient care.

I hope you enjoy Insights and, as always, I welcome your feedback.

Sincerely,

Donald A. Malone Jr., MD
Professor and Chairman, Department of Psychiatry and Psychology
Director, Center for Behavioral Health
Cleveland Clinic Neurological Institute
Using Advanced Neuroimaging to Detect Brain Changes in Electroconvulsive Therapy for Depression

By Erik Beall, PhD

Electroconvulsive therapy (ECT) is considered a uniquely powerful modality for treatment of major depressive disorder (MDD), which has an estimated lifetime prevalence of 13 percent in the general population. With a remission rate approximating 80 percent in the acute term, ECT has proved to be safe and effective for MDD patients when every other intervention has failed.

Roughly 20 percent of patients do not respond acutely to ECT and, among those who do, 40 percent do not experience a sustained remission beyond six months. Furthermore, possible side effects — including transient memory loss and behavioral changes — are not negligible. Inconsistencies in patients’ responses reflect the fact that, despite its undeniable success, this historically controversial therapy works by a mechanism that we do not precisely understand. Thus, progress toward improving treatment is limited, more than 25 years after the National Institutes of Health Consensus Development Conference Statement of 1985 asserted that “much additional research is needed into the basic mechanisms by which ECT exerts its therapeutic effects.”

Data from a preliminary, internally funded neuroimaging study at Cleveland Clinic suggest significant changes in functional brain activation, functional connectivity and gamma aminobutyric acid (GABA) levels in response to ECT. These findings appear to differ between responders and nonresponders to therapy. On the strength of these early results, we believe advanced neuroimaging techniques can detect changes in brain activity linked with the therapeutic response to ECT. We have applied to the National Institute of Mental Health and the National Institute of Biomedical Imaging and Bioengineering with a proposal to use state-of-the-art magnetic resonance imaging (MRI) to better understand the underlying neural mechanisms of successful ECT for major depression and to investigate outcome biomarkers from a single pre-ECT MRI session.

Preliminary Findings

Seven ECT-naïve adult patients (four male and three female) with treatment-resistant depression, for whom a clinical decision to pursue ECT had already been made, were recruited for our study. The subjects were scanned within one week of their first course of ECT and again a few weeks after their final ECT treatment. Informed consent was obtained for the pre- and post-ECT scanning sessions.

Although functional MRI (fMRI) and functional connectivity (fCMBI) have been used to study depression and the treatment effect of antidepressant medications, our study marks the first application of these imaging modalities to investigate ECT. In each scanning session, patients performed three MRI tasks, developed with the assistance of research neuropsychologist Katherine Koenig, PhD, Staff at the Department of Diagnostic Radiology. Two affective picture-viewing tasks required patients to view neutral and unpleasant pictures from the International Affective Picture System and press a button each time a new picture was displayed (Figure 1). A two-back spatial working memory task required subjects to follow a ball as it moved among four boxes. The patients used two button boxes to indicate the ball’s current location during the rest phase and its location two presentations previously during the task phase (Figure 2). Additional imaging was acquired, including spectroscopic measurement in the anterior cingulate cortex and whole-brain high angular resolution diffusion tensor imaging (DTI).

A synopsis of our findings follows:

GABA restoration. A magnetic resonance spectroscopy technique pioneered by Pallab K. Bhattacharyya, PhD, Staff at the Department of Diagnostic Radiology, was used to measure neuronal levels of GABA, the brain’s predominant inhibitory neurotransmitter. Numerous studies have linked depression with reduced cortical GABA levels. We observed significant post-ECT normalization of GABA levels in the anterior cingulate cortex, a region implicated in past depression studies and known to be involved in attention and emotional regulation. Activation volume decrease. Blood oxygenation level-dependent contrast activation levels in response to performance of all fMRI tasks decreased following ECT, dramatically in the case of emotional activation. The change in activation in the orbitofrontal cortex, a region associated with depression and emotional processing, correlated significantly with change in the level of depression.

Unchanged white matter tract integrity. We recorded the first probabilistic tractography-based observations of white matter tract integrity by using high-direction DTI before and after an acute series of ECT. Using transverse diffusivity (water diffusing perpendicular to the primary neuronal direction), we observed no significant change in axonal integrity from pre- to post-ECT scanning, which supports conclusions of prior studies on the safety of ECT.

Toward a Deeper Understanding

We plan to build on these early results in a new study that will enroll 40 patients with major depressive disorder and 30 controls. The treatment group will be scanned pre- and post-acute ECT and six months after the course of therapy concludes; the control group will be scanned only once as a baseline comparison. In particular, we seek to:

• Confirm and increase the specificity of our initial findings on normalization of spectroscopic levels of cortical GABA after successful ECT.
• Identify the acute and long-term effects of ECT on abnormal functional and structural brain connectivity. Our preliminary data suggest that structural connectivity is unchanged by ECT, whereas functional connectivity is dramatically altered. To understand a change in functional connectivity, we need to confirm whether ECT induces axonal damage and whether structural connectivity is a measure of neuronal integrity. We propose to show that ECT produces normalizing changes in functional connectivity driven primarily by cortical, not white matter, changes.
• Determine whether there are significant predictive differences in MRI imaging among nonresponders, acute responders and sustained responders to ECT. We hypothesize that using advanced imaging modalities (fMRI and resting-state fMRI) in a single pre-ECT session will provide us with a biomarker to predict early in the course of therapy which patients will respond acutely and long-term, as determined by the Hamilton Depression Rating Scale.

An Opportunity for Improvement

A typical course of acute ECT involves a total of six to 12 sessions performed every other day, each combining general anesthesia, motor paralysis with muscle relaxants, assisted ventilation and a brief seizure. A full course of this invasive procedure ranges in cost from $6,000 to $15,000. As noted above, not all patients respond to therapy, and some responders require repeat ECT. An improved understanding of ECT would greatly benefit public health by reducing the expense, the number of unnecessary treatments, the delay in proceeding to potentially more useful therapies for nonresponders, and the risk of morbidity and discomfort.

Erik Beall, PhD, is a project staff member at Cleveland Clinic Imaging Institute, with a joint appointment at Cleveland Clinic Neurological Institute. He is also an assistant professor at Cleveland Clinic’s Lerner College of Medicine. His primary research interests are functional neuroimaging with MRI and development of advanced MRI methods. He can be reached at 216.445.6310 or at bealle@ccf.org.
A 45-year-old woman with a 10-year history of major depression and poor response to psychotherapy presented for evaluation. She reported some past benefit from a few medications, but, typically, she responded inadequately and temporarily. Trials had consisted of various classes of antidepressants, including selective serotonin reuptake inhibitors and serotonin-norepinephrine reuptake inhibitors, as well as combination and augmentation strategies.

In recent weeks, she had begun to experience a general sense of fear and apprehension, evidenced by nihilistic thinking and a guarded demeanor. She was subsequently admitted, and a course of electroconvulsive therapy (ECT) was initiated.

By the end of the second week, her thinking became more grounded and medical education. He can be contacted at pandyam@ccf.org.

Case Study: A Successful Course of ECT

By Mayur Pandya, DO

A 45-year-old woman with a 10-year history of major depression and poor response to psychotherapy presented for evaluation. She reported some past benefit from a few medications, but, typically, she responded inadequately and temporarily. Trials had consisted of various classes of antidepressants, including selective serotonin reuptake inhibitors and serotonin-norepinephrine reuptake inhibitors, as well as combination and augmentation strategies.

In recent weeks, she had begun to experience a general sense of fear and apprehension, evidenced by nihilistic thinking and a guarded demeanor. She was subsequently admitted, and a course of electroconvulsive therapy (ECT) was initiated.

After the first week, her thinking became more grounded in reality, but she continued to display a blunted affect with psychomotor slowing. By the end of the second week, she had a brighter affect with less depression.
Ms. Culp had realistic goals, consistent with what could be achieved with the procedure: to be able to smell, speak more understandably, eat food normally, experience less pain and fewer hospitalizations, and look more normal. She had signed an organ donor card, and had no guilt or superstition about the transplant.

During several months of meetings with the care team and bioethicists — which involved both information disclosure and assessment of comprehension of the procedure’s potential risks and benefits — Ms. Culp demonstrated understanding of the surgery, its innovative nature and its uncertainties, and affirmed that it was consistent with her values. In light of all these factors, we determined the transplant was justified.

Patient History

At the time of her evaluation in 2008, Ms. Culp, then 45, had undergone 27 procedures at Cleveland Clinic since 2004, when her then-husband shot her in the face. Though initially depressed, Ms. Culp showed resilience and a strong capacity to cope with her disfigurement. Though initially depressed, Ms. Culp showed resilience and a strong capacity to cope with her disfigurement.

Her psychiatric history included treatment for major depression and post-traumatic stress disorder. Alcohol abuse had been a problem, but she had been sober since her injury. She was taking escitalopram, 10 mg daily; zolpidem, 5 mg at bedtime; and lorazepam, 0.5 mg three times daily. She had no history of inpatient psychiatric admission or attempts to harm herself or others. There was no family history of depression, bipolar disorder or schizophrenia, though both parents were alcoholic.

Psychological Outcomes

As transplant psychiatrist, I formed a strong therapeutic relationship with Ms. Culp, providing psychological support before and after the procedure. To assess her outcomes, several rating instruments were modified specifically for facial transplantation. She has been assessed at regular intervals since the transplant.

Her Beck Depression Inventory score dropped from 16 before the transplant to 6 at three months post-transplant, while she was still taking escitalopram. Her appearance self-eating jumped from 3/10 post-injury to 7-8/10 one year after the transplant. Her State/Trait Anxiety Inventory and Rosenberg Self-Esteem Scale scores remained constant.

On the Psychosocial Adjustment to Illness Scale—Self-Report (PAIS—SR), her scores have steadily improved since the transplant, reflecting her social reintegration. The PAIS—SR has been more useful than the SF-36 or the World Health Organization Quality of Life-BREF for assessing social reintegration and psychological distress.

On the Physical Appearance State and Trait Anxiety Scale—State rating scale, her score fell from 13 at two weeks after transplant to 2 at 12 months postoperative. Her response to her appearance has been influenced by others, especially her daughter, as predicted by symbolic interaction theory. Contrary to our prediction, adjusting to her new face has been less difficult than adjusting to her injury. Her score on Cleveland Clinic’s FACES—Perception of Trimming Scale (see sidebar) indicated that teasing and verbal abuse had decreased and that she was less bothered by them.

Overall, Ms. Culp’s physical and psychological outcomes have exceeded expectations. Her chronic facial pain is gone and her eating and speech have greatly improved. She has gradually regained sensation in her face and is learning to identify smells. As predicted, she does not resemble the donor. She leads an active life, which includes educating people about domestic violence and organ donation.

As the number of face transplants grows and patient outcomes data increase, we can better assess whether the long-term physical and psychological outcomes of this medical innovation outweigh the risks of immunosuppression.

FACES: A Cleveland Clinic Assessment Tool for Face Transplant Candidates

The FACES assessment tool was developed by Cleveland Clinic’s multidisciplinary face transplant team as an objective scoring system for identifying the optimal face transplant candidate. It can be used as a pre-screening and/or post-screening tool, in conjunction with an IRB-approved protocol for facial transplantation.

The first FACES category, functional status, assesses social stability with two validated social point scales — the Strauss–Raco Social Stability Score and the Kamishima Performance Score — that have demonstrated prognostic value in screening candidates for organ transplantation.

The remaining four categories assess the candidate’s physical state: the extent of facial deficits (aesthetic deficits), fitness for surgery (comorbidities), the severity of the facial injury (exposed tissue), and previous head and neck surgeries (surgical history).

Kathy Coffman, MD, is a staff member at Cleveland Clinic’s Center for Behavioral Health, and has worked with transplant patients for more than 20 years. Her specialty interests include alcohol and drug abuse in liver transplant patients, delirium, immunomodulatory effects of psychotropic drugs, and central nervous system effects of scleroderma and celiac disease. She can be reached at 216.444.8862 or at coffmank@ccf.org.
Caring for Cognition: Neuropsychology in the Cancer Clinic

By Michael Parsons, PhD, ABPP

A brain malignancy is a devastating and life-changing event with an arduous course of treatment, a grim prognosis and all the anxieties inherent in a terminal illness. Diagnosis is often sudden in a previously healthy person. Treatment decisions occur in the first few days and weeks, and patients are left reeling, trying to recover from the shock of diagnosis and the side effects of surgery or other treatment. Cognitive issues may seem a relatively minor concern, but more than 90 percent of patients experience some cognitive problems during the course of the treatment, making them one of the most common problems with brain tumors. Many patients fear “living as a vegetable” more than they fear the possibility of death. To address these issues, Cleveland Clinic’s Rose Ella Burkhardt Brain Tumor and Neuro-Oncology Center has integrated neuropsychology into patient care.

A neuropsychologist specializes in brain function with a background in psychology and training in functional neuroanatomy, clinical psychology and mental health care. At Cleveland Clinic, a neuropsychologist with expertise in brain tumors, cancer treatment and cognitive function can see every patient and consult with the caregiving team. Neuropsychology improves the quality of care, helps with clinical decision-making, provides education and support for caregivers, and provides holistic care.

Improving Quality of Life for the Patient

For patients, symptoms are often difficult to understand, and can be extremely frightening and often embarrassing. For example, one patient reported strange symptoms that he was not “crazy,” as he had feared. This scenario illustrates how neuropsychologists broaden the spectrum of care and help the patient and family to understand what is happening. This improves the quality of life for patients who are trying to maximize the quantity of life. Other examples of the role of neuropsychology in patient care include:

- Identification of cognitive deficits for occupational or educational accommodations
- Documentation for disability or other legal issues (e.g., guardianship)
- Identification of cognitive deficits that raise safety concerns (e.g., supervision at home, ability to operate cars or machinery)
- Primary manifestation of brain tumor
- Secondary manifestations of illness (fatigue, anemia, metabolic derangements)
- Other conditions that can co-occur (dementia, stroke)

Neuropsychology Is Integral to Treatment of Brain Tumors

Neuropsychological evaluation gives objective data to the treatment team about brain function. Neurocognitive data can predict tumor grade, detect progression of cancer and predict the cognitive risk of treatments. The Burkhardt Brain Tumor Center (BBTC) has a neuropsychological evaluation program that can screen patients at the time of diagnosis and again at regular intervals during treatment. This rigorous approach allows us to discriminate among the many factors that can contribute to cognitive symptoms in brain cancer:

- Consequences of affective distress
- Secondary manifestations of illness (fatigue, anemia, metabolic derangements)
- Other conditions that can co-occur (dementia, stroke)

Once the underlying cause of the cognitive problem is determined, the strategy and rationale for treatment becomes clear. Treatment options might include:

- Pharmacotherapy, with the choice of agent (e.g., attention-enhancing memory- or mood-related) being dependent on the neuropsychological profile
- Rehabilitation or other therapy, with strategies drawn from the neuropsychological evaluation
- Cognitive surveillance, with repeat evaluation at specified intervals

Neuropsychology plays a critical role in evaluating the effectiveness of brain tumor treatments in clinical trials. These clinical trials have shown that cognitive data can be more sensitive to tumor progression than MR imaging. Because cognitive abilities have such a tremendous impact on quality of life, the use of cognitive data as an endpoint in clinical trials is becoming more common. The BBTC interdisciplinary team includes cognitive evaluation in many of the ongoing clinical trials.

Caring for the Caregivers

The role of caregiver is stressful on many levels. Family members cope with their own feelings of anxiety, grief and loss, while maintaining helpfulness and providing support for the patient. The mental and physical health of the caregiver impacts overall survival and plays a tremendous role in quality of life. Cognitive symptoms impose a greater burden on caregivers than do physical symptoms. For example, a 50-year-old gentleman started to show disinhibited and inappropriate behavior several months before presenting to the BBTC with a seizure. A high-grade glioma involving both frontal lobes was identified. While making treatment decisions, the nursing staff observed the wife and daughter of the patient struggling with the change in his personality. The neuropsychologist evaluated the patient, who showed numerous signs of frontal lobe “executive” dysfunction, including poor impulse control, disinhibition and perseveration. The neuropsychologist provided feedback to the patient and family. Together, they set ground rules to implement in the home to reduce the conflicts. Perhaps more important, the family came to understand that the behavior changes were a symptom of the patient’s illness, rather than signs of dislike or lack of caring.

The Growing Importance of Neuropsychology in the Care of Brain Tumors

During the past decades, our capacity to treat brain cancers has improved significantly, resulting in longer survival times for even the most dire of diagnoses. As we continue to make progress, the cognitive issues and their impact on quality of life will grow in importance. At the BBTC, we have integrated neuropsychology to broaden our care to patients and their caregivers.
Fast-Acting Antidepressant for Treatment-Resistant Depression

By Roman Dale, MD

Major depressive disorder is a significant public health problem with a lifetime prevalence of about 17 percent of the adult U.S. population. Conventional pharmacologic therapy, which requires weeks or months to elicit an adequate therapeutic response, produces full remission in only one-third of patients with major depression. Patients who fail to respond to several adequately dosed pharmacologic interventions are classified as treatment resistant (TRD) and pose a serious clinical challenge. Traditionally, electroconvulsive therapy (ECT) has been used for these patients, but it is successful only in about two-thirds of TRD patients, and it carries the risk of short-term cognitive and memory problems. A growing body of evidence has shown that ketamine initiates a rapid antidepressant response in patients with TRD.

Glutamate and Treatment-Resistant Depression

Glutamate is the most abundant excitatory neurotransmitter in the brain. A complex, integrated system, including glial astrocytes, modulates synaptic neuronal glutamate transmission through multiple receptors, particularly N-methyl-D-aspartate (NMDA) and alpha-amino-3-hydroxy-5-methyl-4-isoxazole-propionic acid (AMPA). A substantial amount of research has been conducted that implicates glutamatergic abnormalities in both major depression and bipolar disorder. Altered glutamate levels have been observed in both plasma and cerebrospinal fluid, and imaging studies, including magnetic resonance spectroscopy, have shown regional alterations. Further, postmortem studies have described increased glutamate levels in the prefrontal cortex.

In addition, the glutamatergic system plays a critical role in neuroplasticity (regulation of intracellular signaling, gene expression, synaptic modification, transmitter release and remodeling of neuronal/dendritic architecture). Other research has linked impairments in neuroplasticity to mood disorders and in particular, it has been suggested, to chronic TRD.

Why Use Ketamine for Treatment-Resistant Depression?

Studies in animal models and clinical case reports have shown that administration of a low dose of intravenous ketamine (0.5 mg/kg of ideal body weight) — a high-affinity NMDA receptor antagonist and AMPA agonist — infused over 40 minutes, initiates a rapid antidepressant response within hours (Figure 1). Placebo-controlled trials have reported a high success rate in TRD patients diagnosed with major depression and bipolar depression. The effect of acute ketamine infusion therapy is transient, with relapse occurring in two to 13 days. However, there are now case reports of long-term repeat ketamine infusions providing sustained remission in TRD patients. The exact mechanism of action is unclear, but according to one rat lab study, ketamine increased spine density and synaptic formation. Through “second messengers,” ketamine quickly activated “mammalian target of rapamycin” (mTOR), a protein kinase, in the prefrontal cortex. Blocking mTOR showed that it was the essential component needed for the neuroplastic increase in spine and synaptic formation that was observed when ketamine was administered.

Questions and the Future

The potential for ketamine to be a therapeutic option for this population of patients is exciting and, hopefully, further investigation will lead to the development of effective oral agents. Of clinical concern is that ketamine has some possible adverse effects, including the risk of psychosis, impaired cognitive ability and a potential for abuse. Many issues remain to be addressed. Finding the optimal dose and duration of infusion to maximize therapeutic effects while minimizing adverse events is critical. Further investigation into the mechanism of action, identification of responders, level of medical monitoring to ensure safety, frequency of “maintenance” infusions and long-term side effects of mTOR activation is needed. At Lutheran Hospital, a Cleveland Clinic community hospital, we have already observed a few patients with severe TRD in whom repeat ketamine administration successfully improved symptoms. To further investigate the efficacy and safety of ketamine for this use, we are planning to initiate a small study of patients with TRD who are eligible for ECT but who do not desire to undergo that mode of treatment. We plan to enroll 10 to 20 patients and report the effects of a low-dose series of ketamine infusions over 12 months in these individuals.

Roman Dale, MD, is Director of Adult Inpatient Psychiatric Services at Cleveland Clinic’s Lutheran Hospital, and a staff member at Cleveland Clinic’s Center for Behavioral Health. His specialty interests include psychosis, neuropsychiatry, and the use of neuromodulation treatments in mood disorders. He can be reached at 216.363.2473 or at daler@ccf.org.

SUGGESTED READING


Deep Brain Stimulation to Modulate the Affective Component of Thalamic Pain Syndrome

By Donald A. Malone Jr., MD, and Andre G. Machado, MD, PhD

Central thalamic pain syndrome is an often-severe form of chronic pain, usually caused by damage to the central nervous system as a result of stroke or traumatic injury of the brain or spinal cord. The pain is usually described as constant, often characterized by burning or aching. Typically, it affects one entire side of the body but some patients have predominant pain in the upper or lower extremities. Symptoms may not appear for weeks or months after the initial injury or trauma, complicating diagnosis and treatment.

Researchers in Cleveland Clinic’s Neurological Institute are collaborating to investigate a novel approach for managing severe, refractory central pain syndrome that builds upon our understanding of chronic pain pathways and research into a surgical therapy for selected psychiatric disorders.

Depression Research Lays Groundwork

Chronic pain has not only a somatosensory sphere, but also an affective and cognitive component that is important, as proposed by Melzack’s neuromatrix theory. In our ongoing investigation, we are evaluating whether deep brain stimulation (DBS) of the ventral anterior limb of the internal capsule and the adjacent ventral striatum (VC/VS) will modulate the affective component of thalamic pain syndrome and, consequently, reduce pain-related disability.

Funded by a $1.5 million grant from the National Institutes of Health, this pioneering approach marks the first use of DBS of the VC/VS for management of central pain. It is informed by the work of multicenter collaborative research, including Cleveland Clinic, which has evaluated stimulation of the VC/VS for treatment of disabling depression and obsessive-compulsive disorder (OCD). Based on encouraging data, the Food and Drug Administration approved DBS in 2009 for use in refractory OCD under a humanitarian device exemption.

Our Cleveland Clinic team partnered with colleagues from Brown Medical School and Massachusetts General Hospital to evaluate DBS of the VC/VS in patients with chronic, severe, treatment-resistant depression, a more common condition. Our initial experience in this area demonstrated that it is possible to modulate the brain circuits related to control of mood. Moreover, this work suggests that targeting the VC/VS region is safe. Further research on DBS in larger populations with treatment-resistant depression is under way.

A New Neuromodulatory Approach for Thalamic Pain

Surgery, including deep brain stimulation, for patients with refractory pain has been attempted over many years, but the most effective option has yet to be determined. DBS of the prefrontal gray area, sensory thalamus or motor cortex showed some promise in a small number of patients with refractory pain disorders, but tended to fail more in patients with central pain syndromes. Results were far from the consistency seen in DBS for movement disorders or in other neuromodulatory approaches for peripheral neuropathic syndromes.

Our double-blind study is enrolling 10 patients with central pain who have experienced severe pain for more than six months and are considered refractory to treatment attempts with conventional medications and other surgical procedures. These patients will undergo bilateral DBS surgery, with implantation under sedation of one lead on either side of the brain. Each lead has four contacts placed from dorsolateral to ventral positions (Figure 1).

Programming titration of the leads occurs after implantation. Stimulation parameters will be adjusted while patients are questioned regarding mood, anxiety and suffering to indicate whether we are effectively modulating the neural circuits of the brain that process mood and the affective sphere of pain, while minimizing possible side effects.

After initial titration, patients will be randomized to receive three months of active or sham stimulation and then crossed over for an additional three months. Monthly evaluations will determine the effectiveness of DBS. Following the six-month evaluation period, patients will undergo 18 months of open-label stimulation.

The Pain Disability Index is the primary outcome measure, but the visual analog scale will also be used along with other scales. The intent is not to focus primarily on how much DBS can alleviate pain intensity—which can be difficult to measure in patients with chronic pain—but, rather, to evaluate how much DBS of the VC/VS region can alleviate pain-related suffering and disability.

Donald A. Malone Jr., MD, is Chairman of the Department of Psychiatry and Psychology and Director of Cleveland Clinic’s Center for Behavioral Health. He also serves as Director of the Psychiatric Neuromodulation Center. His research interests include deep brain stimulation for psychiatric disorders. He can be contacted at 216.444.5817 or at maloned@ccf.org.

Andre G. Machado, MD, PhD, is Director of the Center for Neurological Restoration at Cleveland Clinic. His specialty interests are deep brain stimulation for Parkinson’s disease, essential tremor, dystonia and other movement disorders, as well as emerging deep brain stimulation therapies for central pain, obsessive-compulsive disorder, depression and stroke rehabilitation. He can be contacted at 216.444.6270 or at machad@ccf.org.

SUGGESTED READING


Identifying Depression in Epilepsy Patients for Better Outcomes

By George E. Tesar, MD

At Cleveland Clinic, physicians treating patients with epilepsy regularly use the Neurological Institute’s Knowledge Program (KP) to assess psychiatric comorbidities commonly associated with epilepsy. Depressive disorders are the most common. Routine depression screening and serial measurement of depression provide valuable data toward understanding the relationship between epilepsy and depression and optimal treatment, promoting better overall outcomes.

In 400 B.C.E., Hippocrates wrote a paper exploring what is now known as epilepsy. Physicians once believed the disorder was spiritual or demonic in nature—divine or evil beings fought over a person’s soul, causing the seizures and visions. Modern doctors certainly have a better understanding of epilepsy, yet a few mysteries still cloak the disease. One of these present enigmas concerns the comorbidity of epilepsy and depression.

Hippocrates also recognized the coexistence of the two disorders. A number of common psychiatric disorders prevalent in the general population (anxiety, attention-deficit/hyperactivity, and psychoses) are four to five times more common in patients with epilepsy, with published rates of depression from 20 to 50 percent.

Despite these findings, depression often goes undetected and untreated. Time factors, focus on the epilepsy, and patient reluctance to identify depression as a problem contribute. The treatment of depression in primary care has been studied extensively, and it has been well-established that detection of depression does not by itself improve treatment outcome; care services must be designed to facilitate treatment. The KP, focused on detection and serial measurement of outcomes, is therefore a necessary first step, although insufficient by itself, in tackling this problem in patients with epilepsy.

In 2007, the Epilepsy Center was among the first of the Neurological Institute’s 18 centers to start collecting KP data. The process involves data collection—mostly from the patients—at the point of care. When checking in for an appointment, the patient is asked to complete center-specific questionnaires. Responses are entered by the patient (or an assistant) on a touch-screen tablet computer. The tablet is then returned to desk personnel for uploading of the collected data so it can be viewed in Epic, the Clinic’s electronic medical record, allowing the patient’s clinician access to survey responses during the clinical encounter.

Each center selects survey instruments specific to the needs of its patients. All Neurological Institute patients, including those of the Epilepsy Center, complete two questionnaires: the European Quality of Life-5 Dimen-sions short form and the Patient Health Questionnaire (PHQ-9), a diagnostic scale ranked from 0 to 27 that assesses presence and severity of depression symptoms. Used extensively in primary care, the scale is designed to detect major depressive disorder (MDD) as defined in the Diagnostic and Statistical Manual of the American Psychiatric Association. Scores of 10 or higher have been shown to correlate with MDD. In the Epilepsy Center, patients complete a number of other survey instruments, including the Liverpool Seizure Severity Scale and the Quality of Life in Epilepsy Scale, a 10-point scale evaluating overall satisfaction in life.

Recently we performed a retrospective review of these data in a sample of 2,015 patients who made 5,732 visits to the Epilepsy Center from January 1, 2009, to December 31, 2009. Seventy percent accounted for one or more visits, with 2 percent attending eight or more appointments. The analysis included demographic data as well as driving status, epilepsy type (focal, generalized or unclassified), number of anti-epileptic drugs and antidepressant medication use.

Four hundred seventy-six patients (23.6 percent) suffered from at least a moderate degree of self-rated depression. Two hundred forty-six (12.2 percent) rated their depressive symptoms as moderate, 142 (7 percent) as moderate-to-severe, and 88 (4.4 percent) as severe. According to the National Institute of Mental Health, the 12-month prevalence of depression in the adult general population is 6.7 percent, with a mean lifetime prevalence of 16.5 percent.

Predictors of clinically significant depression included being older, African-American, single and unable to drive. These data were presented at the 64th Annual Meeting of the American Epilepsy Society in late 2010 and are being prepared for publication.

As far as we know, this is the largest study of depression detection in epilepsy patients using a highly efficient, clinically relevant survey tool. Our results focus on the importance of detection as a first step.

Because some patients are offended by the “depression” label, it is imperative that doctors approach any discussion of the problem with sensitivity. Epileptologists have become increasingly sophisticated in their detection and management of depression as more attention has been devoted to it in the literature and here at Cleveland Clinic. The problems already identified that interfere with optimal management have encouraged us to develop strategies promoting seamless integration of epilepsy and psychiatric services. Plans are under way to increase trainee exposure to and involvement in this exciting example of integrated healthcare.

George E. Tesar, MD, is Director, Psychiatry Residency Program at Cleveland Clinic’s Center for Behavioral Health, and a staff member at Cleveland Clinic Epilepsy Center. His specialty interests include emergency psychiatry, anxiety and epilepsy psychiatry, mood disorders, consultation liaison psychiatry, and neuropsychiatry. He can be reached at 216.445.6224 or at tesarg@ccf.org.
Psychosocial Predictors of Weight Loss Following Bariatric Surgery

By Leslie J. Heinberg, PhD

Bariatric surgery is the most effective treatment for severe obesity and is associated with the most sustained weight loss. Yet bariatric surgery requires permanent lifestyle change, and a sizable minority of patients experience suboptimal weight loss (< 50 percent of excess body weight) or weight regain. Although various putative biological mechanisms have been investigated to explain these outcomes, the majority of empirical findings support psychosocial and behavioral factors. Such factors include resumption of overeating (particularly loss-of-control eating), lack of physical activity, psychiatric comorbidity, eating psychopathology and problems with behavioral adherence.

The behavioral health team of psychologists at Cleveland Clinic’s Bariatric and Metabolic Institute has a robust research and clinical program designed to better identify and treat psychosocial risk factors related to poorer outcomes. Rather than conceptualizing such factors as clear-cut contraindications, we attempt to manage and minimize these risks so that the majority of patients can reach surgery and achieve their goals. The following reflects a sample of the research being conducted by our behavioral health team.

We examined postoperative excess weight loss in 106 patients who underwent laparoscopic sleeve gastrectomy, comparing patients who met criteria for a current mood disorder with those who did not have a psychiatric diagnosis. Although marked weight loss in the first year was experienced by both groups, patients with a mood disorder had lost significantly less excess weight at one-, three-, six- and nine-month follow-up (Figure 1). These results highlight the importance of psychiatric assessment in bariatric patients. Those with current or lifetime mood disorders may need additional pre- and postoperative care to improve outcomes.

Previously, our team developed the Cleveland Clinic Behavioral Rating System (CCBRS) as a multidimensional tool for the psychological assessment of presurgical bariatric candidates. Our more recent work examined whether psychological ratings were associated with nonspecific complications and regret one month postoperatively in 139 bariatric patients. We found that patients who endorsed significant nausea and/or regretted having surgery had received significantly lower social support ratings on the CCBRS. Further, patients reporting dehydration had been rated significantly lower on adherence. The results demonstrated that ratings at the time of psychological evaluation may help identify patients’ nonspecific complications, nonadherence with fluid intake and postoperative regret. We hope our future work will help inform treatment recommendations and postoperative intervention for patients determined to be at risk.

Another area of interest is the impact of past problematic alcohol or drug use on postbariatric surgery outcomes. Research indicates that a lifetime history of any substance use disorder is significantly higher in weight loss surgery candidates than the population base rate. Forty-five patients with a history of substance abuse/dependence were compared with 386 patients without a substance abuse/dependence history. The groups did not differ in type of surgery or body mass index (BMI) at change at one- and three-month follow-up. However, after we controlled for their baseline BMI, patients with a substance abuse history had significantly greater BMI reductions at six, nine- and 12-month follow-up. It seems somewhat surprisingly, patients with a substance abuse/dependence history had greater BMI reductions from six months onward. Our results indicate that a history of substance abuse/dependence should not be considered a surgical contraindication, and may demonstrate a patient’s ability to make significant lifestyle changes.

Bariatric behavioral health is a relatively new field and much of the research is in its infancy. Our collaborative, multidisciplinary team at Cleveland Clinic affords us the opportunity to add to the knowledge base and help optimize outcomes for our patients.

References


Leslie J. Heinberg, PhD, is Director of Behavioral Services for the Bariatric and Metabolic Institute at Cleveland Clinic and Associate Professor of Medicine at Cleveland Clinic Lerner College of Medicine of Case Western Reserve University. Her specialty interests include obesity, disordered eating behaviors and body image. She can be contacted at 216-445-1986 or at heinbelg@ccf.org.

Figure 1. Patients with lifetime mood disorders lost excess body weight more slowly in the first month post-surgery, but were able to catch up with patients with no psychiatric diagnoses at three- and six-month follow-ups. However, these patients were not able to maintain this weight loss progress over longer periods of time, losing significantly less percentage excess weight loss at nine- and 12-month follow-up.

Features of depressive disorders, such as memory and concentration problems, may be affecting post-surgical outcomes. Additionally, they may overall to manage their mood, or may lack energy or motivation to engage in physical activity. Many anti-depressant medications also have weight gain as a side effect.

30 40 50
10 1 mo 3 mo 6 mo 9 mo 12 mo

Patient Excess Weight Loss

Current Mood Disorder

No Psychiatric Diagnoses

Follow-Up Visits

TOW ARD WELNESS

TOW ARD WELNESS

IN SIGHTS 2011 | 2012

ClevelandClinic.org/PSPsychiatry

Cleveland Clinic Center for Behavioral Health | 866.588.2264

16

17
Behavioral Health Interventions for Cancer Patients

By Isabel Schuermeyer, MD

Depression is a disabling comorbidity affecting 20 to 47 percent of cancer patients, while another 22 percent experience anxiety. Yet, caregivers frequently overlook the symptoms, missing an opportunity to improve patients’ quality of life and increase medical adherence. It is estimated that depressed patients are three times more likely to be non-adherent.

Cancer patients who suffer from depression have higher pain levels, longer hospital stays and impaired quality of life when compared to non-depressed cancer patients. Depression can be successfully treated, but the first step is making the diagnosis.

Fortunately, a recent educational emphasis on psychosocial oncology has resulted in a major philosophical change based in part on animal model research demonstrating that cancer, regardless of its location, can change the brain chemistry to a distressed state. Thus, it is not only the stress of cancer that causes depression; the disease itself may be causing chemical changes in the brain, resulting in higher rates of depression and anxiety.

To address this population’s unique emotional needs, the Psychosocial Oncology team at Cleveland Clinic’s Taussig Cancer Institute is developing an approach, including a social work triage clinic to facilitate access to psychosocial services, ensuring that patients do not become lost in the system and suffer further distress. Plans include a protocol designed for timely referrals to the staff psychiatrist, social workers or other mental health professionals if the patient’s insurance coverage is outside our network.

Several valid screening tools for identifying depression exist, including the PHQ-9 depression screen and the Distress Thermometer, developed by the National Comprehensive Cancer Network to address physical, emotional and spiritual health and family problems, as well as practical problems related to housing, child care and transportation. These tools provide an extremely helpful, nonjudgmental way to identify underlying issues. We are currently administering these tools to patients referred for psychiatric evaluation within the Taussig Cancer Institute.

Nonadherent behaviors, such as failure to show up for appointments, take prescribed medications or follow the treatment plan are also indicators of depression or anxiety. We attempt to determine the underlying cause and work to resolve the situation.

The interdisciplinary, multispecialty approach at Cleveland Clinic is an ideal setting to address the psychosocial aspects of a patient’s cancer care. Our clinic is based in Taussig Cancer Institute, where we work closely with oncologists, a team of eight social workers, with support from nutritionists, and with access to services that provide spiritual support. The institute’s recent emphasis on psychosocial oncology has resulted in greater collaboration among practitioners of all disciplines, and our goal is to significantly reduce wait time for referrals for these services, when necessary, referring patients to providers beyond the Cleveland Clinic health system.

Cancer patients who suffer from depression have higher pain levels, longer hospital stays and impaired quality of life when compared to non-depressed cancer patients. Depression can be successfully treated, but the first step is making the diagnosis.

Our Psychosocial Oncology Program continues to educate caregivers on clinical symptoms seen in depression. Annual seminars and smaller group sessions focus on how depression and/or anxiety can affect compliance, how to ask patients about their mood, and how to appropriately use and evaluate antidepressants and dosing.

One of the results has been that oncologists and other healthcare providers are becoming increasingly comfortable discussing psychosocial issues and recognize when a patient has depression. The Psychosocial Oncology Program is working toward the goal of making sure distressed patients never have to wait more than one week to be seen by a mental health professional.

Increasingly, oncologists include documentation about depression and ask us to help clarify specific cases, especially when patients are resistant to an intervention by a mental health specialist. While most of our oncologists are comfortable treating depression or anxiety, our program has experienced a significant increase in referrals. My own referrals are often those who fail initial treatment of depression or who are experiencing non-depressive disorders, such as steroid-induced mania, psychosis, memory impairment, fatigue or organic personality change.

Inevitably, barriers remain. Some medical professionals are uncomfortable or lack training in mental health problems related to cancer patients. Popular culture portrays these patients as “warriors” who do everything they can to beat cancer, and patients may be afraid to admit depression because they do not want to appear weak. In addition, some physicians harbor the misconception that all cancer patients are depressed; that depression is normal and treatment does not help. Finally, physicians may be unsure of how to diagnose depression, may not take the time to screen their patients or may fail to monitor patients if they do prescribe antidepressants.

The interdisciplinary, multispecialty approach at Cleveland Clinic is an ideal setting to address the psychosocial aspects of a patient’s cancer care. Our clinic is based in Taussig Cancer Institute, where we work closely with oncologists, a team of eight social workers, with support from nutritionists, and with access to services that provide spiritual support.

A significant component of cancer care is recognition that depression and anxiety must be aggressively treated because individuals with high levels of distress manifest slower recovery and increased morbidity and mortality. All cancer patients should be screened for psychosocial issues with the goal of enhancing their treatment adherence and improving their quality of life.

Isabel Schuermeyer, MD, is a staff psychiatrist at Cleveland Clinic’s Center for Behavioral Health. Her specialty interests include psycho-oncology and treatment of patients with psychiatric complications from neurological disorders and cancer. She can be contacted at 216.444.5963 or at schueri@ccf.org.
Innovative Interventions for Youth with Epilepsy:
Project COPE

By Tatiana Falcone, MD

Despite all the advances in epilepsy research, the quality of life for children with epilepsy, even for those who reach seizure freedom, is not as high as it should be. Young people with epilepsy have increased mental health needs compared with the general population.

Lifetime prevalence of depression in the general population is about 3.7 to 6.7 percent, but in patients with epilepsy it can be as high as 22 percent. Higher rates of depression are also reported in younger patients with epilepsy. Suicidal ideation is another major problem for patients with epilepsy, with a rate nearly double that of the general population, at around 21 percent. Previous studies linked suicidal ideation to antiepileptic medications; however, further research demonstrated that it was related to the high incidence of depression and the time between the first symptoms and referral for treatment.

Further, a survey of mental health problems in the general population found that only 4 percent of youth struggle with mental health issues that children with epilepsy face. Adolescents with epilepsy are also reported in younger patients with epilepsy. Suicidal ideation is another major problem for patients with epilepsy. The survey further found that 70 percent of our patients (191 of 274) felt that they had very little understanding of epilepsy and felt sad, frustrated, and overwhelmed after hearing the diagnosis. Many of their concerns were related to quality of life, poor seizure control, and psychiatric comorbidities.

In an attempt to bridge the gap between lack of access to services and early recognition of mental health comorbidities in youth with epilepsy, a program was designed as part of Project COPE to help this youth population and their parents. Parental sessions focused on:

- Breaking down barriers (perceptions, stigma, and misconceptions about epilepsy and mental health)
- Recognizing the warning signs of behavioral and health problems in children with epilepsy
- Effectively parenting a teenager who has epilepsy
- Encouraging a healthy mind

Teen sessions focused on:

- Living with epilepsy and the importance of emotional wellness
- Developing a healthy teen identity
- Social problem solving
- Taking responsibility for wellness

We will be collecting outcome indicators to assess quality of life, psychiatric comorbidities (anxiety, depression, suicidal tendencies), coping, and parenting styles in this group of patients and parents both before and after the program. Three interventions will be delivered every year for three years.

An additional program aimed at decreasing bullying at inner-city schools is currently being developed to target some of the classrooms where youth with epilepsy attend. There are important, under-recognized, unmet needs in youth with epilepsy. Psychosocial education is an important part of the strategy for helping families cope with some of the comorbidities these patients face.

REFERENCES


Tatiana Falcone, MD, is a staff member at both Cleveland Clinic Epilepsy Center and Cleveland Clinic’s Center for Behavioral Health. Dr. Falcone is doing research in psychiatric comorbidities in epilepsy and biomarkers in mood disorders and schizophrenia. She can be reached at 216.444.7498 or at falcont@ccf.org.
Comprehensive Care of Motor, Psychiatric and Cognitive Deficits in Huntington’s Disease

By Mayur Pandya, DO

“…there seems to exist some hidden power, something that is playing tricks, as it were, upon the will…”

– George Huntington, MD

The haunting and enigmatic nature of Huntington’s disease is captured in this statement taken from Dr. Huntington’s 1872 address at Meigs and Mason Academy of Medicine in Middleport, Ohio. As a result of his classic description, the disorder was later named after him.

Huntington’s disease (HD) is a neurodegenerative illness with an autosomal-dominant mode of genetic inheritance, making it both a family burden and a generational curse. Confirmatory diagnosis is made through DNA genetic testing of cytosine-adenine-guanine (CAG) repeat lengths, with 40 or more repeats being diagnostic (Figure 1). The average life span is 10 to 20 years following the onset of symptoms, with a deteriorating course. In light of this relatively rapid decline and the degree of impact from one generation to the next, the need for comprehensive care for patients and families is paramount.

An Assault on Body and Mind

HD has three primary domains of deficit: motor, psychiatric and cognitive. Chorea is the distinguishing and most closely associated motor symptom, although some patients may present with an absence of voluntary movements, as with parkinsonism and dystonia. The risk of falls from the changes in volitional movement is increased, as with parkinsonism and dystonia. The most closely associated motor symptom, although HD patients may present for psychiatric care prior to diagnosis, as these symptoms typically predate the onset of motor symptoms.

Psychiatric deficits may range from affective symptoms (depression, anxiety, mania) to thought and perceptual disturbances (delusional ideation, auditory or visual hallucinations) to changes in behavior (disorganization, apathy). Cognitively, patients with HD develop a dysexecutive syndrome, characterized initially by difficulties with planning, organizing and cognitive flexibility, but relentlessly progressing to global dementia. Many new HD patients may present for psychiatric care prior to diagnosis, as these symptoms typically predate the onset of motor symptoms.

Comprehensive Care Model

At Cleveland Clinic, we offer an HD clinic to address the multifacitorial domains of illness that present in HD. This multidisciplinary clinic provides comprehensive care for patients and families dealing with this disease. Our team comprises healthcare providers from neurology, psychiatry, neuropsychology, genetics, physical therapy, occupational therapy and speech therapy, who work in a coordinated fashion to assess the physical, emotional, cognitive and behavioral needs of patients with Huntington’s disease. We address issues such as chorea, depression, nutritional needs and swallowing disorders as well as practical concerns such as safety in the home. In the more advanced stages, a discussion of end-of-life management and comfort is a necessary and important aspect of care.

One advantage of a comprehensive care model is the ability to provide a wide range of services to patients and families at each visit in the most efficient way possible. The structure of our HD clinic allows for face-to-face discussions and debriefings among providers after each patient visit. Genetic counseling helps to address the complex issues that arise when individuals first consider genetic testing. The opportunity to educate and offer emotional and psychological support to both patients and families is invaluable.

Community Collaboration

In addition to offering opportunities for participation in clinical research trials, our team at Cleveland Clinic is in the process of joining a more extensive program of collaborative care through the formation of a Northeast Ohio Coalition for Huntington’s Disease. Through an alliance with the local Huntington’s Disease Society of America chapter and various community agencies and resources, we aim to create a uniform standard of clinical care for all patients with Huntington’s disease and to provide equal opportunities for participation in clinical trials, educational initiatives and HD community efforts, regardless of where patients seek medical care.

Currently, there are three active HD trials at Cleveland Clinic: PREdict-HD, CREST-E and 2CARE. The goal of the PREdict-HD study is to define the earliest biological and clinical features of HD to help design future studies of experimental drugs aimed at slowing or postponing the onset in healthy persons at risk for developing HD. CREST-E and 2CARE are drug trials (creatinine and CoQ10, respectively) looking at the ways to slow the progression of HD.

Figure 1. The present research efforts in HD aim to target the proposed mechanisms of pathogenesis and degeneration, believed to be a result of mutant Huntingtin (Htt) protein generated from abnormal CAG repeat length expansion on the Htt gene. Research studies at Cleveland Clinic, such as 2CARE and CREST-E, aim to investigate the antioxidant effects in hopes of discovering neuroprotective benefits.

Future collaborative projects include working in close contact with our parallel multidisciplinary HD clinic at Cleveland Clinic Lou Ruvo Center for Brain Health in Las Vegas, as well as participation in a worldwide initiative called ENROLL-HD, which is a prospective registry study aimed at accelerating the development of therapies for HD by compiling uniform clinical data and biological samples and building a comprehensive database of HD information.

Our hope is that these collaborative efforts will culminate in standardized care and therapeutic advances that lead, in turn, to neuroprotective discoveries and potentially disease-modifying or arresting therapies for this devastating condition.

Mayur Pandya, DO, is Director of the comprehensive HD clinic at Cleveland Clinic, and a staff member at both Cleveland Clinic’s Center for Behavioral Health and Cleveland Clinic’s Center for Neurological Restoration. His specialty interests include psychiatric and behavioral issues in movement disorders, treatment-resistant depression, obsessive-compulsive disorder and medical education. He can be contacted at 216.445.5585 or at pandym@ccf.org.
Donald A. Malone Jr., MD

Staff Listing

Cynthia S. Kubu, PhD, ABPP-CN
Steven Krause, PhD, MBA
Olga Kostenko, MD
Patricia Klaas, PhD
Elias Khawan, MD
Jason Jerry, MD
Joseph W. Janesz, PhD, LCDC
Karen Jacobs, DO
Kelly Huffman, PhD
Jennifer Haut, PhD, ABPP-CN
Lilian Gonsalves, MD
John P. Glazer, MD
Margo Funk, MD
Kathleen Franco, MD
Darlene Floden, PhD
Lara Feldman, DO
Tatiana Falcone, MD
Jung El-Mallawany, MD
Michelle Drerup, PhD
Beth Dixon, PsyD
Roman Dale, MD
Edward Covington, MD
Robyn Busch, PhD
Karen Broer, PhD
Scott Bea, PsyD
Joseph Baskin, MD
Kathleen Ashton, PhD
Susan Albers-Bowling, PsyD
Professor and Chairman, Department of Psychiatry and Psychology

Journal Publications


Book Chapter


Falcone T, Gallaher L, Blanks M, Rizeta E, Sperry L. Needs assessment for the epilepsy needs of the youth of Northeast Ohio. Presented at: Learning Collaborative National Center for Project Access, Epilepsy Foundation and Health Resources and Services Administration; June 11-12, 2011; Baltimore, Maryland.

Falcone T, Gallaher L, Kless B, Lachwani D. Preventing suicide and bullying in adolescents. Presented at: ADAMHS Board; May 2011; Cleveland, Ohio.

Falcone T, Gomeslave C, Steiner J, Urmanova N. $\beta$100 in psychiatric disorders. Presented at: Brazilian Society of Neurosciences; September 9-11, 2011; Caxambu, Brazil.

Falcone T, Harris T. Suicide prevention and emotional wellness. Presented at: Transformational Leadership in Psychiatry; January 2011; St. Thomas, United States Virgin Islands.


Foster M, Busch RM. The relationship of executive function and working memory with recognition of emotion in patients with temporal lobe epilepsy. Presented at: The Cleveland Clinic Foundation Neurological Institute Research Day; May 2011; Cleveland, Ohio.


Khamw E. Depression, mood and behavior in living with MS. Presented at: National MS Society “What’s Hot in MS” Conference; October 9, 2010; Cleveland, Ohio.

Khamw E. Psychiatric aspects of MS. Presented at: Mellen Center Update on Multiple Sclerosis Conference; June 24, 2011; Cleveland, Ohio.


Streem DS. The challenge of outcome measurement in neurology.


Pozuelo L. Psychometric properties of the Beck Depression Inventory-II (BDI-II), Beck Depression Inventory-Fast Screen (BDI-FS) and Center for Epidemiological Studies-Depression (CES-D) in an epilepsy sample: are our present measures sufficient? Presented at: 38th Annual International Neuropsychological Society Meeting; February 3-6, 2010; Acapulco, Mexico.

Strober LB, Busch RM, Chapin JS, Tesar G, Viguera A, Najm I. Psychometric properties of the Beck Depression Inventory-II (BDI-II), Beck Depression Inventory-Fast Screen (BDI-FS) and Center for Epidemiological Studies-Depression (CES-D) in an epilepsy sample: are our present measures sufficient? Presented at: 38th Annual International Neuropsychological Society Meeting; February 3-6, 2010; Acapulco, Mexico.


Strober LB, Busch RM, Chapin JS, Tesar G, Viguera A, Najm I. Psychometric properties of the Beck Depression Inventory-II (BDI-II), Beck Depression Inventory-Fast Screen (BDI-FS) and Center for Epidemiological Studies-Depression (CES-D) in an epilepsy sample: are our present measures sufficient? Presented at: 38th Annual International Neuropsychological Society Meeting; February 3-6, 2010; Acapulco, Mexico.


Pozuelo L. Brain heart connections: fact or fiction? Presented at: Cleveland Clinic Hot Topics in Healthcare; September 24-25, 2010; Las Vegas, Nevada.


Pozuelo L. Patient provider connection panel discussion. Presented at: Women and Heart Disease Summit, Minneapolis Heart Institute Foundation; April 29-30, 2010; Minneapolis, Minnesota.


Pozuelo L. Update in med psych issues and the problem patient. Presented at: Sixth Annual Midwestern Hospital Medicine Conference; October 7-9, 2010; Chicago, Illinois.

