Brief Critical Time Intervention Reduces Rehospitalization

In patients at high risk of readmission following psychiatric hospital discharge, brief critical time intervention (BC TI) was associated with decreased early readmission rates.

**Background:** The transition in recent years from more common use of inpatient psychiatric care to mainly community-based treatment has resulted in shorter hospital stays. However, in part because the time after discharge poses so many challenges to the patient, up to 50% are readmitted within 1 year. BC TI is a 3-month version of the evidence-based 9-month critical time intervention (CTI) model, which was originally developed to coordinate care for homeless patients with mental illness at times of transition.

**Methods:** This study examined the effects of BC TI on rates of readmission in consecutively discharged adults with serious mental illness, with or without co-occurring substance use disorders, who had ≥2 psychiatric admissions in the past 30 days. BC TI was integrated into an existing acute services coordination (ASC) intervention offered at a network of 6 community-based provider organizations for publicly funded patients. BC TI was offered in a 3-phase model: assessment of immediate needs and resources, ongoing connection to other community-based resources, and transition from ASC to community-based mental health services. BC TI enhanced ASC in multiple ways, including a focus on person-centered care, building autonomy, and linking with community-based food and housing resources. A similar group of patients who had been admitted about 1 year previously and received ASC without BC TI served as a comparison group. The primary outcome was early psychiatric hospital readmission (within 30 days of discharge).

**Results:** A total of 149 patients received BC TI, and 224 received ASC alone in the previous year. The BC TI cohort had a higher proportion of women, patients with substance-use disorders, and patients with anxiety or depression. Consequently, the primary analysis was adjusted for these factors. BC TI activities were completed at a high rate; 89% of patients met with their service coordinator before hospital discharge, and rates of treatment planning, needs assessment, and
recovery planning ranged from 78% to 100%. The most commonly identified priorities were housing and income, treatment engagement, and substance-abuse treatment motivation.

Significantly fewer patients in the BCTI group than controls were readmitted within 30 days: 28% versus 47% (adjusted odds ratio,* 2.83; p<0.001). Rates of readmission between 31 and 180 days were also lower with BCTI, but the difference was not statistically significant.

Discussion: In this study, BCTI enhanced an existing service through the addition of more recovery-focused care, better monitoring of individual strengths and needs, and connection to community resources. Although use of a randomly selected control group would have been preferable, results of this study suggest that BCTI reduced readmissions in this high-risk population.

Shaffer S, Hutchison S, Ayers A, Goldberg R, et al: Brief critical time intervention to reduce psychiatric rehospitalization. *Psychiatric Services in Advance* 2015; doi 10.1176/appi.ps.201400362. From the Community Care Behavioral Health Organization, Pittsburgh, PA; and other institutions. **Funded by the Community Care Behavioral Health Organization. The authors disclosed no financial relationships with commercial sources.**

*See Reference Guide.*

ECT in OCD

According to a systematic review, there is no evidence to support the routine use of ECT in treating obsessive-compulsive disorder.

Background: About 10% of patients with OCD do not experience adequate response to the full range of evidence-based treatments. A trial of ECT has been discussed as an additional step, before trying a more invasive procedure, but the strategy has not been systematically evaluated.

Methods: A comprehensive literature search identified all types of studies of ECT in OCD. Studies were included regardless of whether patients had comorbid psychiatric disorders and whether other forms of treatment were started or maintained with ECT. The search identified no randomized trials, 1 quasi-randomized study, 1 case-control study, 1 cohort study, 22 case series, and 25 single-case reports. The primary outcome measure was each study authors’ report of a significant reduction in OCD severity.

Results: In the quasi-randomized trial, participants were allocated to ECT (n=17) or antidepressants (SRIs or "cyclic"; n=49). Clinical Global Impression–Improvement ratings showed marked improvement in 60% of each treatment group. Baseline and final scores on the Yale-Brown Obsessive Compulsive Scale (Y-BOCS) were obtained but not reported, which raises the possibility of selective reporting of outcomes. In addition, methodological details were limited.

In the only other study that included a comparison group, treatment for the 43 patients was heterogeneous and flexible, consisting of various oral and intravenous (IV) antidepressants with or without ECT. Treatment arms were identified retrospectively, with 2 of the 4 groups (n=19) receiving ECT. "Cure" was reported in about two-thirds of the 2 ECT groups and similar proportions of the non-ECT groups, but patients with more severe illness were more likely to receive ECT and IV antidepressants.

The case series and case reports included a total of 279 patients. Positive responses were reported in 60% of the patients; however, Y-BOCS scores were available for only 7 patients (2.5%). Response rates were similar in cases published before and after the widespread availability of SRIs and cognitive-behavioral therapy, which suggests that the inclusion of patients who would now qualify as non-treatment-resistant was similar in both eras. Treatment-resistant OCD was the indication for ECT identified in the overwhelming majority of cases, but previous
exposure to an SRI or CBT was described in less than half of patients and there was little information on the adequacy of prior treatment. Patients who experienced response to ECT appeared to be less likely to have received previous treatment with adequate doses of an SRI prescribed for a sufficient time and were less often prescribed CBT. In the few reports that included follow-up data, maintenance of initial improvement was lost in about one-third of patients.

Fontenelle L, Coutinho E, Lins-Martins N, Fitzgerald P, et al: Electroconvulsive therapy for obsessive-compulsive disorder: a systematic review. *Journal of Clinical Psychiatry* 2015;76 (July):949–957. From the Federal University of Rio de Janeiro, Brazil; and other institutions. Funded by the Fundacao de Amparo a Pesquisa do Estado de Rio de Janeiro; and other sources. One study author disclosed financial relationships with commercial sources; the remaining 5 authors declared no competing interests.

### Nonconvulsive ECT for Resistant Depression

In an open-label proof-of-concept study, nonconvulsive electrotherapy (NET), which uses the standard techniques of ECT but at a dose below the seizure threshold, was effective in a small group of patients with treatment-resistant depression.

**Methods:** Open-label NET was administered to 13 outpatients (mean age, 40 years) with unipolar or bipolar major depressive disorder, a baseline score of ≥16 on the 17-item Hamilton Rating Scale for Depression (HAM-D) despite ongoing medication, and refusal of ECT due to concern about adverse effects. All patients received a full pre-ECT clinical assessment. The ECT device was modified by the manufacturer to deliver doses below the standard machine-set minimum. Patients were administered NET under standard ECT anesthesia. They received brief-pulse bifrontal electrical stimulation 3 times per week at half the standard calculated ECT dose, later reduced to one-eighth the standard ECT dose after seizures were induced in the first 3 patients. Response was defined as a ≥50% decrease from baseline in HAM-D score, and remission as a score of <8. Patients were withdrawn from NET if they did not demonstrate a ≥25% improvement after 4 treatments or a ≥50% improvement after 8 treatments. Those who met minimum improvement requirements were continued in the study until they met remission criteria or underwent 3 consecutive treatments with no further improvement.

**Results:** The duration of the current depressive episode in the study patients averaged 2 years, and they had undergone a mean of 4.5 medication trials. Of 13 enrolled patients, 2 experienced a seizure with their first treatment and were not included in the analysis. Data from the first 4 sessions for another patient, who had a seizure during the fifth treatment, were included. Patients received an average of 7 NET treatments at 2–3 joules.

Overall, the mean HAM-D score decreased from 20 at baseline to 9 after completion of NET (p=0.001). A significant difference was noted by the fourth treatment. Three patients were withdrawn from NET for lack of response after the fourth session. Eight patients met response criteria, including 6 who achieved remission of depression. The average time to reorientation after treatment was 6 minutes. Mean post-treatment scores on a measure of memory were nearly identical to pretreatment scores.

**Discussion:** This finding challenges the widely held belief that a generalized seizure is necessary for the antidepressant effects of electrical brain stimulation. The authors suggest that NET may owe its efficacy to bifrontal electrode placement, which targets brain regions that are critically involved in depression.

Regenold W, Noorani R, Piez D, Patel P: Nonconvulsive electrotherapy for treatment resistant unipolar and bipolar major depressive disorder: a proof-of-concept trial. *Brain Stimulation* 2015; doi 10.1016/j.brs.2015.06.011. From the University of Maryland, Baltimore. Funded by the National Alliance for Research on Schizophrenia and Depression. The study authors declared no conflicts of interest.
Impaired Glucose Metabolism and Suicidal Behavior

In a cohort of middle-aged patients with depression, suicidal thoughts and behavior were associated with higher plasma glucose levels, probably the result of insulin resistance. High lipid levels were also associated with suicidality.

Methods: This registry-based study, conducted in Finland, included 448 patients aged ≥35 years who were referred or self-referred for primary-care management of a first depressive episode in 2008–2009. Study subjects were required to have a Beck Depression Inventory (BDI) score of ≥10 upon referral. Suicidal behavior was defined as suicidal ideation during the past month or a lifetime history of suicide attempt. Fasting glucose and lipid levels were measured at baseline, followed by a 2-hour oral glucose tolerance test.

Results: Nearly half of the patients (49%) were experiencing suicidal thoughts, and 72 (16%) had a past suicide attempt. Study participants with suicidal behavior also had more severe depression and a higher prevalence of alcohol use disorder. Patients with suicidal behavior had higher blood glucose levels when fasting (109 vs. 103 mg/dL; p=0.013) and after 2-hour glucose challenge (121 vs. 105 mg/dL; p=0.0013) than those without suicidal behavior. The 2 glucose measurements each had a highly significant linear association with the presence of suicidal behavior. Compared with the lowest tertile, patients in the highest tertile of fasting glucose had an elevated risk of suicidality (odds ratio,* 2.18); for 2-hour glucose, the odds ratio for the highest versus lowest tertile was 1.99.

Baseline and 2-hour insulin levels did not differ as a function of suicidal behavior. Patients with suicidal behavior had higher scores on the Quantitative Insulin Sensitivity Check Index (QUICKI), a measure of insulin resistance; higher total cholesterol, LDL cholesterol, and triglycerides; and higher scores on the BDI.

Discussion: It is likely that elevated glucose in suicidal patients was related to insulin resistance, rather than insufficient insulin secretion. Reduced serotonin levels have been associated with increased weight and waist circumference, elevated glucose, and insulin resistance. Impaired glucose tolerance may be linked to suicide via cytokine-mediated inflammation, resulting in depletion of tryptophan and emerging serotonergic hypofunction, depression, and impulsivity.


*See Reference Guide.

Security of Electronic Mental-Health Data

Use of electronic communication continues to increase in mental-health settings. In order to avoid exposure to HIPAA violations, licensing sanctions, and civil lawsuits, clinicians must maintain rigorous practices to maintain privacy and security.

Networks that are hard wired are generally safe from hackers as long as the consumer is using a firewall, which is generally built into the router or available as an option on the computer’s operating system. Wireless networks are vulnerable, whether in the patient’s home or in hospitals and clinics that offer access to staff and patients. These networks should be password-protected using WPA encryption, rather than less secure WEP encryption. Users should communicate only using encrypted websites—i.e., those using the "https" prefix. Https is offered as an option by most major email providers, such as Gmail, Yahoo,
and Hotmail. With a free program called HTTPS Everywhere, users can automatically activate https encryption. A more secure option is to install a virtual private network (VPN) on public computers.

**Videoconferencing**, increasingly used to deliver mental-health treatment, should not occur via free services like Skype or FaceTime. Security can be increased by using a VPN, high-end video-conferencing hardware, or security-enhancing add-ons to the free services (e.g., Doxy.me).

**Cell phone** instant messages can be intercepted by hackers or viewed by anyone if a phone is lost, stolen, or left unattended. Clinicians should turn on the password protection on their mobile devices and instruct patients to do the same. Providers should also avoid using Short Message Service (SMS) or instant messaging, instead opting for encrypted self-destructing messages. Wickr is a free application for encrypting messages. If the patient needs a return phone call or text outside of office hours, calls/texts can be made from a cell phone without providing the patient with the clinician’s private number using the Burner app.

**Computers** used in the office or clinic should also be kept secure from hacking. Windows and Apple computers are configured to provide automatic security updates, but all computers should be scanned weekly with antivirus software, also available from Microsoft or Apple. Computers that contain patient data or communications should be encrypted, as should the contents of flash/USB drives. Computers should have a firmware (Apple) or BIOS (Windows) password. Computers should be disposed of properly, using a secure erase or physically destroying the hard drive, rather than merely deleting data. For data backups, cloud storage is generally secure and preferable to copying data locally. Clinicians should also periodically review the privacy settings on their social network sites.

Privacy is a crucial aspect of mental-health care for which providers are responsible. Common privacy and security measures may not be adequate to comply with HIPAA requirements for communication and record keeping, and clinicians should carefully monitor the security of their technology use.

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**Rating Scales for Antipsychotic-Induced Adverse Effects**

The selection of antipsychotic adverse-effect rating scales for use in research is driven by psychometric properties, but in clinical practice, completeness of symptom coverage and ease of use may be more important. According to results of a systematic review, adverse effects of antipsychotic medication in chronically ill patients may be best assessed using multi-domain patient-completed questionnaires.

**Methods:** English- and Dutch-language publications describing rating scales for antipsychotic adverse effects were identified by literature search. Psychometric characteristics of the scales were compared in terms of reliability and validity using various measures of correlation.

**Results:** The search identified 440 studies, of which 46 described the psychometric properties of a scale and 394 described clinical use of a scale. A total of 14 of the evaluated scales were for multi-domain adverse effects, 29 of the scales were limited to extrapyramidal effects, 7 measured sexual dysfunction, and 3 assessed other single-domain adverse effects. The most frequently used multi-domain scales were the Udvalg for Kliniske Undersogelser Side Effects Rating Scale for Clinicians (UKU-SERS-Clin) and the Liverpool University Side Effect Rating Scale (LUNSERS). The most commonly used extrapyramidal-symptom scales were the Simpson-Angus Scale (SAS), the Abnormal Involuntary Movements Scale (AIMS), and...
the Barnes Akathisia Rating Scale (BARS). The scales for sexual and other adverse effects were used infrequently.

The multidimensional scales with the best psychometric characteristics were the UKU-SERS Patient (Pat) and Clinician versions, the LUNSERS, and the Glasgow Antipsychotic Side-effect Scale (GASS). Each of these has different advantages—e.g., the GASS takes only 5 minutes to complete and grades severity and frequency of adverse effects; the LUNSERS and the UKU-SERS are more comprehensive; and the LUNSERS has “red herring” items to detect over-reporting of symptoms. Of the extrapyramidal-symptom scales, the ones with the best psychometric performance were the SAS, the Drug-Induced Extrapyramidal Symptom Scale, and the Maryland Psychiatric Research Center Scale. The Antipsychotics and Sexual Functioning Questionnaire and the Nagoya Sexual Functioning Questionnaire had the best psychometric characteristics for measuring sexual side effects.

Discussion: It is essential to assess medication adverse effects in clinical practice, particularly in patients receiving antipsychotics. Multi-domain rating scales are preferable to single-symptom scales because they can capture effects that would otherwise be missed if patients are not directly questioned about them or if they do not recognize a problem as a medication effect. Patients who are clinically stable can complete a multidimensional scale—e.g., the UKU-SERS-Pat, LUNSERS, or GASS—relatively quickly in the waiting room before their appointment. Their responses can facilitate a discussion of adverse effects and tolerability.

van Strien A, Keijsers C, Derijks H, van Marum R: Rating scales to measure side effects of antipsychotic medication: a systematic review. Journal of Psychopharmacology 2015; doi 10.1177/0269881115593893. From Jeroen Bosch Hospital, ’s-Hertogenbosch, the Netherlands. This research was not funded. The authors declared no potential conflicts of interest.

Reference Guide

Odds Ratio: A comparison of the probability of an event in 2 groups. An odds ratio of 1 implies that the event is equally likely in both groups. An odds ratio greater than 1 indicates that the event is more likely to occur in that group than in the comparison group.