Handbook of ECT

A Guide to Electroconvulsive Therapy for Practitioners

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To my wife, Andrea, with appreciation for her unending patience and support.

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Preface

This book is a revision of *Brain Stimulation in Psychiatry* (Kellner, 2012), but now with a return to its original title from the first edition and an exclusive focus on electroconvulsive therapy (ECT). Despite the interest in other brain stimulation modalities, ECT remains the only proven, clinically viable, noninvasive brain stimulation technique for the treatment of very serious psychiatric illness. Notwithstanding the unfortunate stigma surrounding ECT, the treatment has continued to gain acceptance, and its use is growing in many countries around the world; therefore, a dedicated handbook for the optimal practice of clinical ECT is warranted.

ECT has a remarkable track record of safety and efficacy, and a large scientific evidence base to support it. It remains a standard treatment in the modern psychiatric armamentarium. Psychiatrists and other health professionals need to be aware of the most recent advances in ECT technique and clinical indications that allow it to be effective and better tolerated than ever before.

This book is a handbook of clinical practice that is aimed both at practitioners and trainees who need a quick, up-to-date source about most aspects of clinical ECT. It is not meant to be an exhaustive text, rather a primer of technique, as well as a guide to the most important current reference articles in the field. I have tried to interpret recent research for the practitioner in a way that allows evidence-based practice decisions, but avoids unnecessary complications that could actually impede clinical decision-making. The tendency to change practice with each new study finding, before it has been adequately replicated, should be avoided. With the citations at the end of each chapter of the manual, the reader will find a concise reference guide to the current medical literature for each aspect of ECT practice.

Contemporary ECT is extremely effective and safe, and the desire to provide patients with the most tolerable form of ECT is, of course, each practitioner's goal. Efficacy, however, should not be sacrificed out of exaggerated concern for transient cognitive side effects, given the severity of illness of most ECT patients and the urgent need for relief of depressive and psychotic symptoms. The choice of electrode placement and stimulus dosing strategy, both of which affect efficacy and tolerability, should be decided for each patient based on a careful assessment of the clinical situation and the patient's preferences (see Chapter 3).

I am encouraged that the worldwide community of ECT clinicians and researchers continues to contribute rapidly to the knowledge base about how best to perform ECT and the understanding of how ECT exerts its therapeutic actions (Martin et al., 2018; Oltedal et al., 2017). The state of ECT in the

United States was recently well summarized in an editorial in *JAMA Psychiatry*, "Modern Electroconvulsive Therapy: Vastly Improved Yet Greatly Underused" (Sackeim, 2017). It is my hope that the information in this book will enable clinicians to practice state-of-the-art ECT, prescribing it appropriately to all those seriously ill patients who need it.

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Abbreviations

ACT	Association for Convulsive Therapy
ACTH	adrenocorticotropic hormone
AMD	anterograde memory dysfunction
APA	American Psychiatric Association
BDNF	brain-derived neurotrophic factor
BF	bifrontal
BL	bilateral
BT	bitemporal
CNS	central nervous system
CORE	Consortium for Research in Electroconvulsive Therapy
CT	computed tomography
DBS	deep brain stimulation
DST	dexamethasone suppression test
ECG	electrocardiogram
ECS	electroconvulsive shock, animal analog of ECT
ECT	electroconvulsive therapy
EEG	electroencephalogram
EFFECT	European Forum for ECT
EMG	electromyogram
FDA	US Food and Drug Administration
GABA	gamma-aminobutyric acid
GERD	gastroesophageal reflux disease
HAM-D	Hamilton Rating Scale for Depression

HPA	hypothalamic-pituitary-adrenal
HRSD	Hamilton Rating Scale for Depression
ISEN	International Society for ECT and Neurostimulation
J	joules
MADRS	Montgomery-Asberg Depression Rating Scale
MAOI	monoamine oxidase inhibitor
mC	millicoulomb
MMSE	Mini-Mental State Exam
MoCA	Montreal Cognitive Assessment
MRI	magnetic resonance imaging
MRS	magnetic resonance spectroscopy
NIMH	National Institute of Mental Health
NMS	neuroleptic malignant syndrome
NPO	nothing by mouth
PCP	phencyclidine
PET	positron emission tomography
QIDS	Quick Inventory of Depressive Symptomatology
QIDS-SR	Quick Inventory of Depressive Symptomatology-Self Report
RMD	retrograde memory dysfunction
RUL	right unilateral
SNRI	serotonin–norepinephrine reuptake inhibitor
SSRI	selective serotonin reuptake inhibitor
TCA	tricyclic antidepressant
TSH	thyroid-stimulating hormone