

Case Studies in Medical Toxicology

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Diane P. Calello • Michael D. Levine
Aaron Skolnik
Editors

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From the American College of Medical Toxicology



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Toxicology
Foundation**

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of Medical Toxicology

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LD: For my husband, Brian, and my parents, Bernice and Ray—a perfect combination.

CM: Geoff, without your tolerance of the chaos around me, none of this would be possible. You are my rock.

DC: To my family, without whom nothing would be possible.

ML: This book is dedicated to my wife Ilene Claudius, and my parents Carol and Murray Levine.

AS: To the loves of my life, Jessica and Asher Lev.

Foreword

Medical toxicology, a specialty of medicine focused on the prevention, diagnosis, and management of human poisoning, is a discipline of stories. Unlike most illness, in which a disease insidiously overtakes a patient, poisoning is often a discrete, definable event. Viewed as a spectator, the event would appear as an unfolding series of foreseeable actions leading to an unintended culmination: poisoning. The child left alone with the bathroom cabinet ajar, the worker reaching for the “water bottle,” the depressed patient attempting to end their anguish, the injection drug user buying from a new supplier, each representing a common scenario in which poisoning occurs. What happens next depends on many variables such as the nature, dose, and route of exposure, the size, age, and health of the patient, the set and setting, the recognition of the event, and even the availability and timely administration of the specific antidote.

Considering the many permutations, each of these unfolding stories requires skill to piece together in a logical and orderly manner. Prognosis guides expectation, and treatment quells fear. The knowledge and experience to understand the natural history of various poisonings are part of the early training necessary to become a medical toxicologist. This is a specialty of Sherlock Holmes-like detective work, in which no clues can be left untouched. Just as a single carbon separates an evening of gregarious enjoyment (ethanol) from a lifetime of blindness (methanol), no detail can be considered too small.

For several years, the American College of Medical Toxicology (ACMT), the professional organization of medical toxicologists, has held a monthly member-only, case-based webinar. During this time, I have led hundreds of participants on a journey to dissect complicated, intriguing human poisonings, while each shared their thoughts and beliefs on the how’s and why’s of medical management. Each case was initially selected for presentation because it was a challenge to someone, and on this basis it served as a learning tool for medical toxicologists across the USA and, often, across the world.

In this book, a group of dedicated medical toxicologists and gifted clinician educators have faithfully reproduced the case discussions, added detail, filled in blanks, and corrected errors, to allow others who were not able to engage in the initial

process to benefit from the work of the participants. The cases are anonymized, but nonetheless represent the potential for real life exposures that can, in an instant or over a decade, lead to consequential adverse effects on human health. To increase the value of the book, each case is followed by a discussion of key issues to broaden out the relevance to other medical specialties.

I want to thank the editors (Christina, Diane, Aaron, and Michael) for their tireless attention to detail. A particularly special thanks goes to the champion of the process, Leslie, for making this labor of love a reality. Hopefully their combined efforts will inspire the readers of the book to savor the intriguing tales, while reminding each of us about our tenuous relationship with the chemical milieu in which we live.

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Preface

In 2011, the American College of Medical toxicology began offering webinars to members entitled, “National Case Conference.” Real medical toxicology cases were presented by people from various training programs and were moderated by seasoned medical toxicologists. The popularity and educational value were quickly recognized and the webinars continue every month. The cases are usually presented by medical toxicology fellows, but sometimes also presented by residents or medical toxicologists who are faculty members. Listeners participate by asking and answering questions.

The format used produced valuable information that the editors thought would be an excellent foundation for a book of cases. Five prominent medical toxicologists, the lead editor an immediate past president of the American College of Medical Toxicology, edited all of the included cases. In addition, the editors added questions and answers that cover various aspects of medical toxicology, to allow readers to test their knowledge on a variety of toxicology topics. At the end of each case, specialty-specific guidance was added to broaden the appeal to providers in primary care and intensive care. This volume is a necessary resource for medical students, residents, and fellows, as well as seasoned medical providers.

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Charlotte, NC
Newark, NJ
Los Angeles, CA
Pittsburgh, PA

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The editors would like to acknowledge the American College of Medical Toxicology, the organizers of the National Case Conference, and, most importantly, all of the patients and healthcare workers involved in these cases.

Disclaimer: NCC is an educational endeavor and a quality improvement effort intended to improve patient care. The cases in this book are not intended to define standard of care. Attempts have been made to ensure HIPAA compliance.

All data and information provided in this activity is for informational purposes only. The American College of Medical Toxicology and the editors and contributors of this book make no representations as to accuracy, completeness, present acceptability, suitability, or validity of the content and will not be liable for any errors or omissions in this information or any losses, injuries, or damages arising from its display or use.

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About the Editors

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Michael D. Levine, M.D., F.A.C.M.T. After matriculating from the Chicago Medical School, Dr. Michael Levine completed an emergency medicine residency at the Brigham and Women's/Massachusetts General Hospital. He subsequently attended the Banner Good Samaritan Medical Center in Phoenix, Arizona, where he completed his medical toxicology fellowship. Michael Levine is currently faculty at the University of Southern California, where he serves as Chief of the Division of Medical Toxicology. His current research interests are mostly focused on toxicity from antiplatelets and anticoagulants. He is on the editorial board of the *Journal of Medical Toxicology*.

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