

Book Reviews

PET and SPECT in Neurology PET and SPECT in Psychiatry PET and SPECT of Neurobiological Systems

R.A.J.O. Diercks, A. Otte, E.F.J. de Vries, and A. van Waarde, eds.

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There is a series of 3 new books on PET and SPECT that is marvelous in terms of editorial coordination and comprehensiveness of content. After browsing them on and off during the last 6 mo, it took me an entire week to read all the way from the first page of *PET and SPECT in Neurology* through *PET and SPECT in Psychiatry* to the last page of *PET and SPECT of Neurobiological Systems*. Many chapters were ripe and rich in well-organized knowledge and sometimes delivered new and exciting information. I particularly enjoyed the chapters on consciousness, on anesthesia, on pharmacologic and nonpharmacologic interventions, and on the endocannabinoid system. Finding the most appealing content among the vast material in these books was like finding a needle in a haystack, but the effort was worth it.

Each of the 3 books has its own guest editor, and the difference in authors between books gives each book its own flavor. The volume on neurology was filled with details on clinical studies, some of which were repeated in separate chapters written by different authors. The authors were mainly from The Netherlands. The evidence from clinical studies in this book helps readers understand how to use PET and SPECT in clinical settings. Optimizing the clinical use of PET and SPECT is like hitting a moving target, and redundant explanations might indeed be necessary. The depth and breadth of the descriptions among chapters are relatively consistent, but certain descriptions—such as the optimal use of PET, of SPECT in epilepsy, or of acetazolamide SPECT in cerebrovascular occlusive diseases—are insufficient, and the description of the use of amyloid plaque imaging is a bit superfluous.

The volume on psychiatry is streamlined on the basis of the DSM-IV or DSM-V classification of psychopathology. Many qualified psychiatrists participated in making this book, and their description of major conditions such as depression is so full-fledged that even absolute novices—not taking care of psychiatric patients every day—can grasp the concepts. Evidence-based approaches or outcome-based concepts on the use of medical resources do not recommend the routine clinical use of PET or SPECT in psychiatric illnesses, whether for perfusion, metabolism, or neurotransmission chemistry imaging. However, the book includes an excellent, detailed literature summary that leads readers to attend to developments in that direction. This literature summary is a great introduction to the present preclinical stance of SPECT and PET in psychiatry. What is regrettable is a lack of description of the connectivity studies that recently have been developed, though many chapters include the findings of regional abnormalities even with rigorous statistical parametric mapping. Underestimation of neurodevelopmental disorders, such as attention deficit hyperkinetic disorder and disorders of the autism

spectrum, is another disappointment. They are covered only under the category of miscellaneous subjects.

The volume on neurobiological systems was written mainly by chemists, who describe the present status of progress in each field well but with varying depth and detail. The structure of the book is interesting; it was not immediately apparent to me that the topics are presented in alphabetical order by title of chapter. Discovering this fact was refreshingly entertaining after I had spent lots of time reading the details while being puzzled as to why the nicotinic system is presented after the muscarinic system or opioids after the norepinephrine system. Also amusing is the anthology of apologies at the end of this and the other books in the series. Readers will enjoy these anthologies and understand how hard it was to coordinate and organize these books. Several chapters are slightly frustrating, such as that on the nicotinic acetylcholine receptor system, which describes in too much detail the sole chemistry in chemistry fashion, and that on the *N*-methyl-D-aspartate receptor system, which unnecessarily describes the many failed attempts to develop radiochemicals for these receptors. In addition, the lack of images to complement written descriptions of representative brain-imaging radiochemicals is a limitation for readers, especially nuclear medicine physicians such as me.

In subsequent reviews, I and my colleagues will summarize and comment in more detail on each volume of this series of unprecedentedly comprehensive and charming books, revealing their uniqueness and individual merits.

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Letters to the Editor

Repeatability of Tumor SUV Quantification: The Role of Variable Blood SUV

TO THE EDITOR: The recent study by Weber et al. (1) addresses standardized uptake value (SUV) quantification repeatability in 2 multicenter trials of non-small cell lung cancer and reports repeatability coefficients of $-28\%/+39\%$ and $-35\%/+53\%$ for SUV_{peak}. No clear correlation was found between SUV test–retest variability and any of several considered parameters (body weight, age, clinical stage, blood glucose level, uptake time). We would like to draw attention to another possible explanation, namely interscan variation of the arterial blood SUV.