

JNMT Bookshelf

RADIOPHARMACEUTICALS IN NUCLEAR MEDICINE PRACTICE

Richard J. Kowalsky, PharmD, J. Randolph Perry, MD, Appleton and Lange, 1987, 516 pp, \$95.00.

This book is an informational text about radiopharmaceuticals used in nuclear medicine clinical practice. It is written for radiology residents, nuclear medicine technologists, and nuclear pharmacists. Although this book offers an excellent overview of radiopharmaceuticals currently used in nuclear medicine, it does not contain information about some of the newer agents on the market. (e.g., mebrofenin, in its discussion of hepatobiliary agents). Presumably this is due to the lag time incurred in production of the book.

The author states that the overriding emphasis of this book is on application of basic principles. The first four chapters deal with the basic physical and chemical properties of radiopharmaceuticals in a concise and understandable manner. Chapter five gives a good overview of the operation and design of a nuclear pharmacy. Chapter six contains a short but relatively complete review of quality control as it pertains to radiopharmaceuticals, dose calibrators, and survey instruments. The next eight chapters deal with radiopharmaceuticals classified by the organ system they image, which the reader can refer to individually if there is a question about a specific clinical application. These chapters give a brief discussion of the physiology and anatomy of the organ system, followed by a historical chronology of the development of the radiopharmaceuticals used. Subsequent discussions focus on current agents, with a consideration of their methods of production, stability, quality control, physical, chemical and biological properties, potential toxicity, and radiation dose. Finally, these chapters end with a discussion of the clinical application of radiopharmaceuticals used in imaging the organ system. There is some duplication of information in each chapter by using this format, and this is one of the minor criticisms that I have regarding this book. The remaining chapters deal with *in vivo* and *in vitro* function studies, as well as miscellaneous radiopharmaceuticals not previously covered. The final chapter deals with licensing, regulatory control, and radiation safety, and the authors deserve praise for being able to clearly describe the regulations and overlapping jurisdictions that apply to the practice of nuclear medicine. This book is well written, well referenced, and well edited.

This book is a good general reference of radiopharmaceuticals used in nuclear medicine. It has some inadequacies when compared with contemporary literature. There are some redundancies in the clinical applications chapters but it does

achieve the goal of providing an intermediate to advanced level introductory discussion of radiopharmaceuticals in nuclear medicine practice.

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INTRODUCTORY PHYSICS OF NUCLEAR MEDICINE Third Edition

Ramesh Chandra, PhD, Lea & Febiger, Philadelphia, 1987, 233 pp, \$18.50.

This introductory text is directed toward resident physicians and nuclear medicine technology students. The third edition is changed only slightly from the second edition, and includes an update of the chapter on radiopharmaceuticals, with the addition of radiopharmaceuticals in widespread clinical use. A short discussion of therapeutic applications of radiopharmaceuticals has also been added. The most significant change is the rewriting of the chapter previously titled, "Special Techniques in Instrumentation," into a chapter devoted to emission computed tomography. Most of this revised chapter discusses the basic principles of computed tomography with short sections on SPECT and PET. The points critical to SPECT imaging—alignment, uniformity, and axis of rotation are mentioned, but without discussing quality control.

This book remains a purely introductory text; for example, there is only a brief mention of the use of energy, uniformity, and linearity correction devices on scintillation cameras. Also, the discussion of imaging computers is limited to a small range of clinical applications.

In the first seven chapters this edition discusses an elementary review of physics, radioactive decay, production of radionuclides, radiopharmaceuticals, interactions of radiation and matter, and radiation dosimetry. Eight other chapters cover the principles of radiation detection, a general introduction of imaging devices, and a brief discussion of biological effects of radiation and handling radionuclides. The book is softbound and remains economically priced. It is most valuable for the chapters on nuclear physics. Like most other textbooks, chapters on instrumentation must be supplemented with more up-to-date information; however, it remains useful as a primary text for students and certainly serves as a library reference.

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