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There is no denying that the next phase of growth for nuclear medicine is in radionuclide therapy. *Radiopharmaceuticals for Therapy* is a well-executed book, divided into five parts with the primary focus on the use of radioisotopes for the treatment of disease. Chapter 1 lays the foundation of the book and is where the author sets the stage for the book. This chapter contains an introduction to the field of nuclear medicine and discusses how radiopharmaceuticals are used in both diagnostic and therapeutic applications. Table 1.1, highlights the key radionuclides used in nuclear medicine. The authors, Prof. F.F. (Russ) Knapp and Dr. A. Dash, then shift into the discussion of therapeutic radiopharmaceuticals, recognizing that there exists renewed interest in the growth and in the development of such agents due to the recent FDA approval of Xofigo® (^{223}Ra dichloride) for treatment of castration-resistant prostate cancer. Chapter 2 deliberates the criteria for the selection of the therapy radionuclides, noting that successful production and procurement of radionuclides is the first step in the assessment of the utility of therapeutic radiopharmaceuticals. The authors explain that the underlying principle for radiotherapy is either through ablation or damage to diseased tissue through emissions of energetic β- particles, α particles or Auger electrons (e^-). The first two chapters were written to provide an overview on radiotherapy and are geared towards a broad scientific based audience.

Chapter 3 briefly gives a historical background on development of alpha radionuclide therapy and transitions into the discussion on the rapidly increasing interest into alpha emitters due to Xofigo®. Table 3.1 outlines the key alpha-emitting radionuclides for therapy and in the chapter summary, the authors recognize the barriers which exist for the widespread use of these agents. Chapter 4 explores the Auger emitters, which is an alternative to the use of alpha-emitting and beta-emitting radioisotopes for therapy. Table 4.1 provides a helpful comparison table of energy emission and soft tissue penetration between alpha and beta particles and the Auger electrons.

Part II of the book provides an up-to-date review and evaluation on the production of the radionuclides used for therapy. This part of the book was written with a focus geared more towards the

radiochemist. It is divided into four contributing chapters: reactor-produced agents such as ^{177}Lu; accelerator-produced with examples like ^{225}Ac and ^{223}Ra; generator system produced for instance ^{90}Sr/^{90}Y and finally production via decay of naturally occurring parents such as the ^{227}Ac/^{227}Th/^{223}Ra generator system. The detailed discussion of production for each radioisotope is crucial to the readers in order to facilitate the understanding of the true limitations that exist for widespread use of some radiopharmaceuticals for therapy.

Following Part II, the remainder of the book focuses on the therapeutic applications of particular radiopharmaceuticals. The first two chapters of Part III deal with agents used for the treatment of cancer and such therapeutic applications include radiolabeled antibodies (RIT) and peptide receptor radionuclide therapy (PRRT). Table 9.7 gives examples of radionuclides for RIT and Table 10.4 lists essential radionuclides for PRRT. The last chapter of Part III touches on the application of therapeutic radiopharmaceuticals in hepatocellular carcinoma (HCC), which is the sixth most common cancer worldwide. Again, the authors provide Table 11.3 to depict the relevance of different radionuclides in the treatment of HCC. Part IV of the book describes and assesses therapeutic radiopharmaceuticals for treatment of chronic diseases, covering therapeutic agents for bone pain palliation, nonmelanoma skin cancer (NMSC), inflammation of synovial joints and intravascular radiation therapy (IVRT) for arterial restenosis.

In Part V, the authors conclude the book with dialog on opportunities for new therapeutic agents, namely nanoparticle based targeted delivery into the diseased cells, stating that this would take us closer to the realm of personalized medicine. The final chapter closes with discussion of new therapeutic agents providing a synopsis of the “complex maze of regulatory and marketing requirements” that is necessary to move a drug from development on the laboratory bench to introduction to the patient in the clinical setting- “bench to bedside.” The presentation of information in the final chapter was strategic and beneficial for readers to understand the limitations of therapeutic

radiopharmaceutical development and, thus application. *Radiopharmaceuticals for Therapy* is a comprehensive book on the topic of radiotherapeutics and unquestionably delivers on its promise to be highly useful to the nuclear medicine professionals.

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