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BOOK REVIEW

Radiopharmaceuticals for therapy by F.F. (Russ) Knapp and Ashutosh Dash

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This book consists of 17 chapters divided into five sections and widely and extensively analyzes almost all the aspects related to the development and use of radiopharmaceuticals for therapeutic use.

The authors are F.F. Russ Knapp, working at the Oak Ridge National Laboratory in the US, and Ashutosh Dash , from the Bhabha Research Center in Mumbai, India. Their publication is tuned to a multidisciplinary audience ranging from students/residents and practitioners involved in the field, including not only physicians specialized in nuclear medicine (and in related specialties such as oncology, radiotherapy, immunology, rheumatology, surgery), but also radiochemists, radiopharmacists, physicists, biologists and others. In addition, it is intended for practitioners and/or students, looking for an upgrade in this charming and ever-expanding field of special cancer therapies. In a text of 350 pages, being at the same time concise, informative, and formative of international standing, are expressed the backgrounds of many leading research groups, transferring their experience and knowledge to this publication. As a further value, it has to be evidenced that the information is borrowed from databases, such as the IAEA, which reports the research of 256 nuclear reactors in the world.

Part I begins with the analysis of radiopharmaceuticals used both in diagnostic and therapeutic nuclear medicine. For the most important radiocompounds there is an overview of their chemical, physical, biological and pharmacokinetic features as well as the presentation of the rationale for their use in therapy. Each subject is then discussed in detail in the following sections. Part II, indeed, describes production, processing and availability of radioisotopes used in therapy, as premise to the sections III (cancer) and IV (chronic diseases), in which the practical use of these therapeutic radiotracers is presented. In addition to treatment protocols already consolidated for a long time (e.g., radioiodine therapy of thyroid cancer and hyperthyroidism with ^{131}I or NET treatment with radiolabeled somatostatin analogues) there are presented to the reader recent advances in molecular biology, radiochemistry and radioisotope production that are leading to the so-called targeted radionuclide therapy (TRT). Various clinical trials on the use of many radiolabeled molecules, such as peptides and monoclonal antibodies, are discussed to individuate the possible implemental role of nuclear medicine in patients with cancer, with also considering possible applications in non-oncologic diseases. In these chapters are therefore discussed issues such as radionuclide therapy in palliation of painful bone metastases (including the hypothesis of a curative effect in patients with prostate cancer allowed by ^{223}Ra), radio-synovectomy in selected patients with joint inflammation, the loco-regional treatment in non-melanoma skin cancer (NMSC), and the treatment of vessel re-stenosis post PTCA. The fifth and last section, finally, opens a new window in the field of nanotechnologies, also discussing all the managerial aspects associated with radiopharmaceuticals used in therapy, from their production to the bedside. Specifically, aspects related to quality assurance, to principles of good production and post-production quality control, even with legislative and economic aspects, are treated. Is it clear that great progress has been made in recent years, but the road ahead, although still long, is very promising.

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