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ICRU REPORT 32: METHODS OF ASSESSMENT OF ABSORBED DOSE IN CLINICAL USE OF RADIONUCLIDES

International Commission on Radiation Units and Measurements. Washington, DC, 1979, 52 pp, $11.00.

This report described the methods of evaluating the absorbed dose received by tissues of persons to whom diagnostic quantities of radiopharmaceuticals are administered.

The meat of the report resides in two chapters and an appendix that provide the reader with the definitions, biological data, mathematical assumptions, and formulae necessary for computation of absorbed dose.

Additionally, several practical example problems are given to aid the reader in understanding dose calculations.

I found it to be a practical teaching aid for dose calculation on the technical level if the student is well versed in mathematics and physics as applied to radiation. Its primary purpose, however, is as a reference.

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ICRU REPORT 33: RADIATION QUANTITIES AND UNITS

International Commission on Radiation Units and Measurements, Washington, DC, 1980, 25 pp, $8.50.

Well, they're at it again. They force me to say hertz even though it hurts. Now it seems we must all relearn our basic units relating to radiation. On the way out are: curie, roentgen, and rad. Those old faithfuls just don't seem to line up with anything else in the metric system in a nice relationship. The new international system (SI) units to replace them are: reciprocal second, coulomb per kilogram, and joule per kilogram, respectively.

To make things easier for those of us who live out here in the real world, we will be allowed to use the special names "becquerel" for reciprocal second, and "gray" for joule per kilogram (for absorbed dose) and "sievert" for joule per kilogram (for dose equivalent). Old-fashioned names like curie and rad must be expurgated from our vocabulary by 1985.

No sense trying to fight it. The change will be good for us; 3.7×10^{10} per sec never did make sense anyway. Why should we relate to a gram of radium? Forget the radium; forget the curie. Their years of utility are now past.

One becquerel (Bq) is one spontaneous nuclear transition per sec. Now that's an easy number to remember.

We administer an activity in becquerels (Bq) to the patient and he receives an absorbed dose in grays (Gy).

Not only must we recalibrate our minds, but we will be faced with the very real problem of recalibrating our dose calibrators. (Which, come to think about it, should more properly be termed activity calibrators; the term "dose" can have several meanings and is therefore ambiguous).

The report is concise, clearly written, and leads the reader gently by the hand through difficult terrain. Only occasionally does it drop you to your knees with formulae that give you the distinct impression that you won't be using them every day.

This report will have great impact on our work, and should be carefully studied by all who are engaged in nuclear medicine.

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NUCLEAR MEDICINE IN UROLOGY AND NEPHROLOGY

P.H. O'Reilly, R.A. Shields, H.J. Testa, Butterworths, London-Boston, 201 pp, $44.95.

Every nuclear medicine department performing renal studies should have a copy of this text. It is one of the few concise yet comprehensive works describing and evaluating in practical terms the current applications of nuclear medicine renography, renal imaging, clearance studies, and bone scanning.

This book contains three parts—Techniques; Clinical Applications; and Basic Principles. There is also an appendix to Part 1 on protocols of procedures, which presents the fine details of various procedures described in the book.

Although written for clinical urologists, nuclear medicine clinicians, technologists, and other specialists will find this book useful.

The nuclear medicine technologist should find the sections on techniques and basic principles especially useful in understanding the principles and procedures of urologic nuclear medicine. The former describes the techniques available in nuclear medicine and their interpretations; the latter gives a more technical description of the principles behind the use of nuclear medicine in urology and the choice and use of equipment, radiopharmaceuticals, and quantification methods. Chapter

16 (Mathematics) explains the compartmental model of renal clearance, a very difficult subject to cover in a simplified manner. It is well written and has excellent illustrations. At the conclusion of the chapter there is a summary of symbols used in mathematical analysis of renography, which is very helpful in understanding the complicated equations necessary to determine compartmental analysis.

The section on clinical applications discusses in detail the application of the procedures to specific urologic problems and should be useful in the imaging reading room.

My only negative comment is that the book lacks information on renal anatomy and physiology. Yet this is an excellent book and will certainly be well worn in any nuclear medicine service performing or planning to begin urologic studies.

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