These procedure guidelines describe almost all common patient investigations and therapies that are carried out by a department of nuclear medicine. The emphasis is on the quality of the procedures as well as the necessary equipment and radiopharmaceuticals.

Most of the investigations relate to diagnostic procedures, though therapeutic treatments using radiopharmaceuticals are also discussed.

Furthermore, this book describes physical and pharmaceutical aspects used in nuclear medicine.

It is primarily intended as a handbook and reference for those working at a department of nuclear medicine and for those who are still in training.

However, it is not a textbook and does not follow the evidence based medicine methodology.

Members of the Dutch society of nuclear medicine (NVNG) wrote the procedure guidelines under the direction of the NVNG committee for quality improvement with the assistance of the Dutch society of clinical physics (NVKF) and the Dutch society of hospital pharmacists (NVZA).

With this publication the current opinion within nuclear medicine with respect to highquality patient care is decreed.

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NEDERLANDSE VERENIGING VOOR NUCLEAIRE GENEESKUNDE









Procedure Guidelines Nuclear Medicine



Dutch Society of Nuclear Medicine

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Editor-in-chief: JP Esser

I Diagnostic Methods II Radionuclide Therapy III Radiopharmaceuticals IV Equipment V Radiation Dosimetry in Nuclear Medicine JP Esser, chiefeditor JP Esser, chiefeditor JJG van den Heuvel, editor JA van Dalen, editor JA van Dalen, editor

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Foreword

Dear reader,

It is with the greatest pleasure that I present to you the new Procedure Guidelines. For the fifth time now, several of our colleagues have succeeded in updating the guidelines, aiming to bring the practice of Nuclear Medicine in line with the latest evidence-based practices. With our first loose leaf edition appearing in 1988, our profession was already aware that the practice of Nuclear Medicine is not an arbitrary matter but that patients deserve that we perform diagnostics and treatment in an unambiguous and accountable manner. In doing so, we were the forerunners of what has now been made mandatory as standard practice by the government.

Over the past few years, there has been a trend in healthcare across the board to practise medicine in line with established criteria and protocols. It has now been widely accepted that patient care is delivered in the safest and best possible way if it proceeds in line with protocols established by the profession itself. As care professionals, we are increasingly required to justify how we conduct our healthcare practice and on what grounds we have made our choices. Both policy makers and health insurers, after all, are guided by achievement indicators and outcome parameters to decide on matters of licensing and contracting.

There are three reasons that make this edition a rather special one. Firstly, this is not only a work of revision but also, with many new chapters, of complete renewal. Secondly, this will be the last edition to appear in print. With advancing digitization, revision will be done on a continuous, online and modular basis from now on. Thirdly, owing to surging interest in and from neighbouring nations, this revision has been published in English. A special word of thanks, therefore, should go to our colleagues E.C. Owers and C.D.J.M. de Pont, who have undertaken the full copy-editing of this edition.

I would like to thank kindly all those authors whose great dedication has contributed to the realization of this edition, headed by the Committee for Quality Improvement of Dutch Society of Nuclear Medicine (NVNG), consisting of J.J.G. van den Heuvel, J.A. van Dalen, B. de Keizer, K.P. Koopmans, M.N. Lub-de Hooge, R.L. Romijn, N.C. Veltman and further J.B.A. Habraken and A.J. Arends. Their work took place under the inspiring leadership and exemplary management of editor-in-chief, J.P. Esser.

It is gratifying to think that, in fact, all of us bear responsibility for the accomplishment of these guidelines for all of us have, explicitly or perhaps implicitly, approved the chapter versions that have now been included. I am confident that our approval ensures our commitment to their observance. We would like to express our hope, finally, that this new edition will continue to be the cornerstone of our Nuclear Medicine practice, if now at an international level.

Prof. L.F. de Geus-Oei President of the Dutch Society of Nuclear Medicine

Preface

These Procedure Guidelines contains: I Diagnostic Methods II Radionuclide Therapy III Radiopharmaceuticals IV Equipment V Radiation Dosimetry in Nuclear Medicine

Status

These procedure guidelines are recommendations and give no right to any special legal status, rights or obligations.

Members of the Society have had the opportunity to comment on all aspects of each procedure described in this book for the period of at least three months. All comments have been reviewed and the text has been changed when necessary. In this way we have created a broad support and consensus among all members of the Society.

Warning

Some of the guidelines use unregistered (radio)pharmaceuticals. In most of these cases this is explicitly stated at the beginning of the chapter. However, it should not be assumed that a (radio)pharmaceutical is registered when no warning is given. The doctor in charge of the investigation/ procedure is accountable for the use of all these radiopharmaceuticals. In most cases the doctor needs to fill out a form for compassionate use. This is a form in which the responsible doctor declares that he/she is aware that the product is not proven safe and effective and that the patient has been informed of this. These radiopharmaceuticals are mentioned in this book due to their acceptance by the occupational group, in accordance with the up to date professional literature.

Content

Each guideline is an approach to the acts that are necessary for adequate implementation and effective application of the most common nuclear medicine therapies and investigations. The procedure guidelines must be seen as minimum requirements. If a procedure differs this must be done with solid motivation. Alternative procedures and/ or use of other parameters that will eventually give the same information are optional. Also the activity doses mentioned are recommendations. They will depend on the sensitivity of the gamma camera system which is used, count statistics, image quality, status of the patient, radiation protection and other facts. It is clear that these procedure guidelines must not be seen as a textbook. Wherever possible, up to date evidence based literature and guidelines were pursued in writing these procedure guidelines. This book is therefore, not an exhaustive account of all subjects. Most of the common, though not all, investigation/therapy procedures are described. Experimental investigations and or therapies are not taken into account in this edition.

Purpose

The purpose of the procedure guidelines is to improve the quality of nuclear medicine investigations and radiation protection of patients. In order to reach this objective we strive for standardisation of procedures between different institutions/departments. Reproducibility and comparison with former studies is important.

Improvement of Quality

This is probably the last paper edition of the Procedure Guidelines of Nuclear Medicine. From now on, Committee for Quality Improvement of Dutch Society of Nuclear Medicine (NVNG) aims to update the guidelines on the NVNG website whenever necessary. Improvements and additions can then be processed more quickly. NVNG members will be informed by email or mail if/when this is the case.

Auteurs and reviewers

This and former editions of our guidelines came into being through extensive contribution of several society members. The person(s) in charge of writing or updating a guideline is(are) mentioned above every procedure guideline. Reviewers are not always mentioned though their contribution is essential. We, as the Committee for Quality Improvement of Dutch Society of Nuclear Medicine (NVNG), would like to thank all the writers and reviewers for contributing to these procedure guidelines. Without their help we would never have been able to accomplish this task.

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