Introduction of Image Guided Radiation Therapy into Clinical Trials

ISN/UMF Human Health Reports No. 19

This publication provides guidelines and recommendations for preparing clinical trials for the introduction of Image Guided Radiation Therapy (IGRT). IGRT is a technique that allows for precise and accurate delivery of radiation therapy to the target site, while minimizing exposure to healthy tissue. IGRT is particularly useful in the treatment of cancer, where it can help to improve patient outcomes and reduce side effects. The publication covers various aspects of IGRT, including dosimetry, imaging, and quality assurance. It is aimed at radiation oncologists, physicists, and other professionals involved in the treatment of cancer.

Radiocurability in Cancer Care: Facing the Global Challenge

IAEA Human Health Series No. 23 (Rev. 1)

This publication provides an overview of the challenges and opportunities in radiation oncology, with a focus on the treatment of cancer. It covers the different types of radiation therapy available, as well as the latest developments in imaging and dosimetry. The publication also discusses the role of radiation therapy in the management of cancer, and highlights the importance of quality assurance and safety in radiation oncology.

Cytochrome P450s and Oxidative Stress: A Comprehensive Overview

IAEA Human Health Series No. 22

This publication provides a comprehensive overview of the role of cytochrome P450s and oxidative stress in human health and disease. It covers the different types of cytochrome P450s, their function in metabolism, and their interactions with other biological systems. The publication also discusses the role of oxidative stress in the development of various diseases, including cancer, cardiovascular disease, and neurodegeneration. It is aimed at researchers, clinicians, and other professionals involved in the study of P450s and oxidative stress.

Dosimetry of Small Static Fields Used in External Beam Radiation Therapy

International Journal for Radiation Oncology, Biology, andPhysics

This publication provides an overview of the dosimetry of small static fields used in external beam radiation therapy. It covers the different methods used for dosimetry, including planar and experimental arrangements. The publication also discusses the use of Monte Carlo simulations for dosimetry, and highlights the importance of quality assurance and safety in radiation therapy.

Atlas of Small Static Field Dosimetry for Brachytherapy

IAEA Human Health Reports No. 21

This publication provides an overview of the dosimetry of small static fields used in the treatment of cancer with brachytherapy. It covers the different types of brachytherapy, including implant and interstitial techniques, and highlights the importance of quality assurance and safety in this field. The publication also discusses the use of Monte Carlo simulations for dosimetry, and provides guidelines for the certification of dosimetry laboratories.

Accuracy Requirements and Guidance for Radiopharmaceuticals and Nuclear Medicine Procedures

IAEA Human Health Reports No. 11

This publication provides an overview of the accuracy requirements and guidance for radiopharmaceuticals and nuclear medicine procedures. It covers the different types of radiopharmaceuticals, including single photon and positron emission tomography (SPECT/CT) agents, and highlights the importance of quality assurance and safety in this field. The publication also discusses the use of Monte Carlo simulations for dosimetry, and provides guidelines for the certification of dosimetry laboratories.

Radiation Protection and Medical Uses of Ionising Radiation

IAEA Human Health Reports No. 22

This publication provides an overview of the radiation protection and medical uses of ionizing radiation. It covers the different types of ionizing radiation, including X-rays and gamma rays, and highlights the importance of quality assurance and safety in radiation therapy. The publication also discusses the use of Monte Carlo simulations for dosimetry, and provides guidelines for the certification of dosimetry laboratories.

Nuclear Cardiology: Guidance on the Implementation of SPECT Myocardial Perfusion Imaging

IAEA Human Health Reports No. 10

This publication provides an overview of the implementation of SPECT myocardial perfusion imaging in nuclear cardiology. It covers the different types of SPECT imaging, including imaging of the left ventricle and the myocardium, and highlights the importance of quality assurance and safety in this field. The publication also discusses the use of Monte Carlo simulations for dosimetry, and provides guidelines for the certification of dosimetry laboratories.
The IAEA serves as the world’s intergovernmental forum for international cooperation in the nuclear field. The IAEA is one of the leading publishers in the area, with a focus on nuclear and radiological safety, emergency response, nuclear power, nuclear medicine, nuclear waste management, nuclear law, and safeguards, as well as relevant topics in food and agriculture, health care, industry and the environment.

Justification of Practices, Including Non-Medical Nuclear Imaging

The IAEA Safety Guide on Nuclear Medicine is essential for anyone involved in the field of nuclear imaging. It provides guidance on the justification of radiation exposure during nuclear imaging procedures. It emphasizes the importance of minimizing radiation dose to both patients and operators while ensuring the accuracy and quality of diagnostic images.

Application of the Risk Matrix Method to Radiotherapy

This publication describes a project to introduce a tool for self-evaluation by radiotherapy services. It provides guidance on how to apply the risk matrix method to evaluate the justification of radiation exposure in radiotherapy. This approach helps to identify areas for improvement and to ensure compliance with regulatory requirements.

Criteria for Radiological Activity Concentrations for Food and Drinking Water

The publication outlines the criteria for the maximum permissible concentrations of radiological activity in food and drinking water. These criteria are based on scientific evidence and are in line with international standards to ensure the protection of public health. The publication also includes guidance on how to monitor and control radioactive contamination in these areas.

Commissioning of Radiotherapy Treatment Planning Systems: Testing for Typical External Beam Treatment Techniques

This publication provides guidance on the commissioning of radiotherapy treatment planning systems (TPS), including testing procedures and criteria for typical external beam treatment techniques. It emphasizes the importance of ensuring the accuracy and reliability of TPS to deliver safe and effective treatment plans.

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