



Radiation protection during PRRT therapy in NGHHA

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Abstract:

Radiation protection in medicine covers in principle, medical exposure, occupational exposure, and public exposure in association with various clinical circumstances. Medical exposure involves not only patients but also their relatives and medical staff. Peptide receptor radionuclide therapy (PRRT) is a molecular targeted therapy used to treat neuroendocrine tumors (NET). In National Guard Hospital in Saudi Arabia the PRRT therapy is kind of new treatment and the radioprotection for such treatment was unknown because of the lack of reference or lectures, in some cases it may be considered as a low contamination treatment because it's a beta emission, PRRT delivers high doses of radiation to tumors in the body to destroy or slow their growth and reduce disease side effects, Therapeutic procedures with beta emitters are growing. The purpose of this topic is to report on the current state of PRRT, to clarify the issues of radiation protection associated with PRRT, and to show future prospects. Medical staff is often not aware of the high risk of exposure to beta radiation, inappropriate dose meters available or used can make it more complicated, the



personal dose meters used often are not worn properly. Skin dose of staff during labelling (preparation) and infusion (administration) should be done carefully because extremity exposure of technicians during preparation may exceed dose limit if safety standards are not strictly kept. PRRT requires deliberate radiation protection standards as it uses unsealed radionuclides and gives therapeutic radiation doses in humans. the goal of this topic is the proposal of large variations of individual practices during preparation and administration and to imply options for improving radiation safety.

Keywords: isotope; radioprotection; radionuclide; PRRT; Exposure rate.