Radiopharmaceutical Activity Administered in Patients Undergoing Nuclear Medicine Examinations in Recife/PE

Isabelle Viviane Batista de Lacerda, Raquel Cordeiro de Oliveira, Erica Muniz de Miranda

UFPE

Fernando Roberto de Andrade Lima, Mercia Liane de Oliveira

CRCN-NE/CNEN

Medical uses of ionizing radiation have grown very rapidly over the last two decades. Due to the risks associated, it was suggested the adoption of diagnostic reference levels (DRL) for medical procedures that use ionizing radiation. These levels are expected not to be exceeded for standard procedures when good and normal practice regarding diagnostic and technical performance is applied. In Brazil, in spite of the large number of exams carried out yearly, there is no evidence of data published by the government that indicate the establishment of local DRL for nuclear medicine exams. So, this study aims to provide a compilation of activities administered in three nuclear medicine procedures and compare them to the DRL established by the European Commission (EC) for thirty-six countries. This study was carried out on 366 patients with varies disease case covering age between 18 to 90 years old undergoing nuclear medicine exams at a public hospital in Recife/PE. The mean of the radiopharmaceutical activity administered was 1022.98 MBq for bone scintigraphy (MDP-99mTc), 732.17 MBq for parathyroid scintigraphy (MIBI-99mTc), and 157.73 MBq for static renal scintigraphy (DMSA-99mTc). These results do not exceed the maximum value of DRL established by the countries belonging to the EC. However, it is important to emphasize that only 2 of 21 countries established a DRL above 800 MBq for bone scintigraphy. Due to the variation of these levels that can exist between the countries, it becomes evident the need to establish a local DRL. Since Brazil does not have a local DRL, it difficult the identification of practices that do not comply with the standards. The results obtained in this study confirm the importance of the establishment of a local DRL for nuclear medicine exams in order to standardize doses and avoid under- or over-exposure of patients to radiation.