

Overview on radiochemical purity control for ^{99m}Tc radiopharmaceuticals commonly used in nuclear medicine.

Abstract

Most radiopharmaceuticals are used for the purpose of medical diagnosis. These radiopharmaceuticals contain small amount of the active substances with a radionuclide attached to them to allow scintigraphic imaging or measurement of biodistribution. Radiation is a general property of all radiopharmaceuticals, which when administered give the patient an imminent radiation dose. Quality control (QC) tests are mandatory for radioactive drugs which are intended for human administration [1]. The safety and efficacy of radiopharmaceuticals are important factor of the quality assurance protocol. QA in radiopharmacy is critical for practice. A poor-quality diagnostic radiopharmaceutical, while not in itself unsafe, it could give incorrect information about the patient's condition leading to an inappropriate choice of therapy [2]

In this study a considerable number of DMSA, PYP, MAG-3, DTPA and HMPAO radiopharmaceuticals samples are analyzed for their radiochemical purity using radiochemical purity standard procedure. These products used in nuclear medicine Department of University Hospital Centre "Mother Theresa" and some private clinics in Albania are collected and tested for 5 years period. The aim of the work is to present the results for their radiochemical purity and to emphasize the need for the radiopharmaceutical quality control. The mean radiochemical purity was 96.94% (standard deviation 7.82%) and 4.52% of all tested preparations failed to meet radiochemical preparation limits.

Keywords: radiopharmaceutical, quality control, radiochemical purity, radiation.

References

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