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Assessment of Ga-68 prostate specific membrane antigen progress using PET/CT in patients with prostate cancer

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Prostate cancer is one of the most malignancies affecting men. Recurrence of prostate cancer is usually assessed by elevating serum Prostate-Specific Antigen (PSA) level. These days, new radiotracers using Positron Emission Tomography (PET) have demonstrated new insights recurrence of disease. Meanwhile, emerging Ga-68 Prostate Specific Membrane Antigen (PSMA) provides opportunities to localize prostate cancer in low level of PSA and recurrence. In the current report we presented intense uptake in Ga-68 PSMA, (PET)/Computed Tomography (CT) in early and late monitoring of 74 years old male patient with prostate carcinoma diagnoses. An automated synthesis module (Scintomics GRP, Fürstenfeldbruck, Germany) and 68-Ge/68-Ga generator (Pars Isotope, Tehran, Iran) used for radio-pharmaceutical production was purchased. Disposable cassette kits and chemicals including the precursor DKFZ-PSMA-11 were obtained from ABX advanced biochemical compounds. A HPLC system was used to determine the radiochemical purity. Radionuclidic purity of the final product solution and separation cartridges was analyzed using gamma spectrometry. Fast radio-labeling of HBED-CC represents which this radiopharmaceutical is a stable at room temperature. Stability procedures controlled with distinct temperature conditions during the radio-labeling reaction and directed predominantly to the formation of the thermodynamically more stable one. 68Ga-PSMA-HBED-CC (68Ga-PSMA-11) radio-synthesis implemented using a cassette-based procedure. Clinical 68Ga-PSMA-HBED-CC PET/CT scanning resulted in high quality images in patients. 68Ga-PSMA-11 is a promising radiotracer in which has better sensitivity and specificity for even low level of prostate cancer lesions versus the conventional imaging.

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