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Research Article **Published Date:-2017-12-26 00:00:00**

Synthesis, Radioiodination and Biological distribution of 5-(5-(tributylstannyl) benzofuran-2-yl) pyridin-2-amine as an amyloid imaging agent

In this work an efficient method developed for the synthesis of 125I-benzofuran-2-yl) pyridin-2-amine (125IBPA), followed by radioiodination with 125I by using Chloramine-T at pH 8. The reaction proceeds within 10 min at room temperature (20-25°C). The radiochemical yield determined by Thin-Layer Chromatography (TLC) using hexane:ethyl acetate (1:6 v/v) and the purity analyzed by high-performance liquid chromatography using a reversed-phase RP18column and acetonitrile:0.1 M ammonium bicarbonate (pH 7.5) (1:1) as the mobile phase at a flow rate of 1 ml×min?1. The radiochemical yield using aH2O2 oxidant found equal to 96.5% with a radiochemical purity of 125I-BPA of over 96.5%. The biodistribution data in normal mice indicated a high initial uptake of 6.54±0.10 (% ID/g±SD) in the brain within 30 min post-injection. These results promote a further the use of 125I-BPA as a novel agent for brain imaging.

Case Report **Published Date:-2017-11-05 00:00:00**

Near Complete Response to 177Lu-PSMA-DKFZ-617 Therapy in a Patient with Metastatic Castration Resistant Prostate Cancer

Prostate specific membrane antigen, a type II transmembrane protein is an excellent target for the radionuclide therapy in advanced prostate cancer patients due to its high expression in the prostate cancer cells. We present the case of a 69-year old man with advanced metastatic castration resistant prostate cancer. In view of rising serum PSA levels despite hormonal and chemotherapy, we decided to perform a 68Ga-PSMA-HBED-CC PET/CT scan (prostate specific membrane antigen). It revealed intense radiotracer uptake in the prostate, lymph nodes and multiple skeletal sites. Five cycles of 177Lu-PSMA-DKFZ-617 radioligand therapy were administered in the patient followed by an intrim 68Ga-PSMA-HBED-CC PET/CT. Intrim 68Ga-PSMA-HBED-CC PET/CT scan demonstrated a near complete remission of disease with a corresponding decrease in the sPSA levels. During the follow-up duration of 12 months, the patient did not develop haematological, kidney and liver toxicity during the course of treatment and follow-up. 177Lu-PSMA-DKFZ-617 is a promising therapeutic option in metastatic castration resistant prostate cancer (mCRPC) patients.

Review Article **Published Date:-2017-10-17 00:00:00**

Hyperthermia and Breast cancer: A short review

The main goal of hyperthermia is to elevate the tumor temperature to kill tumor cells and improve local control. The usage of hyperthermia is combination with radiotherapy or chemotherapy. Hyperthermia is delivered in different types of cancers like breast cancer, melanoma and sarcoma. Breast cancer treatment enroll surgery, chemotherapy, radiotherapy and hormone therapy. Hyperthermia is given once or twice a week concomitantly with radiotherapy or chemotherapy. This short review will enlight the types, physics, and the results of hyperthermia especially in the management of breast cancer therapy.

Review Article **Published Date:-2017-08-27 00:00:00**

Ra-223 dichloride management in a Nuclear Medicine Unit: experience of a referral institution

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Ra-223 dichloride is a first-in-class alpha-emitting radiopharmaceutical recently introduced into clinical practice for treatment of men with Castration-Resistant Prostate Cancer (CRPC) and symptomatic bone metastases. Due to the proven benefit on Overall Survival and the favorable toxicity profile, Ra-223 therapy is gaining widespread use in both US and Europe. In this article, we describe the routinary management of patients undergoing Ra-223 treatment in our Institution.

Currently, Ra-223 therapy is indicated for 6 intravenous injections (55 kBq per kg of body weight) administered every 28 days. In comparison to other radiopharmaceuticals, Ra-223 handling and administration do not need any additional training for authorized users. Due to the minimal external dose rate emission, Ra-223 dichloride can be delivered in an outpatient setting. Moreover, no particular precautions other than standard hygiene measures must be taken by patients' family members or caregivers. Ra-223 therapy is associated to a favorable hematologic toxicity profile, while non-hematologic adverse events are generally mild and easy to manage.

Given the favorable toxicity profile of this treatment, clinical trials are currently ongoing to evaluate efficacy and safety of Ra-223 treatment in combination or sequence with recently approved drugs such as abiraterone acetate, enzalutamide and sipuleucel-T. In addition, the recent interest in Ra-223 bone lesion dosimetry could open the way to a dosimetric-based therapeutic approach with Ra-223. In this new scenario, results of these promising clinical trials may help clarifying the optimal sequencing of new therapeutic possibilities for metastatic CRPC and the appropriate eligibility criteria for Ra-223 treatment in oncologic patients.