

International Conference on Clinical PET-CT and Molecular Imaging (IPET 2015): PET-CT in the Era of Multimodality Imaging and Image-Guided Therapy

IAEA-CN-232/401

Unique PET Facility in Skopje - New Perspective for the Health Care of the Patients in the Balkan Region

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Background: Positron emission tomography has become one of the most promising methods in detecting oncological, cardiological, neurological diseases in the last decade and entered slowly in the other fields showing promising results. As is well confirmed, PET has the key advantage of enabling diagnosis of diseases in the early stages, determining the extent of the disease process and its pathological impact, as well as monitoring the effectiveness of chemotherapy and treatment planning.

Methodology: The University Institute for Positron Emission Tomography is under official establishment as a unique facility in the country and in the Balkan Region. The new facility is result of the Government investment and joint project with IAEA. The new facility has a Department for Production and Department of Molecular Imaging connected together in the one unique system of Radiation Protection, QA, BMS, Informatics and technical and administrative support connected to the network of the unified Health Care System in the country.

Results: Building includes cyclotron for production of ultra-short-lived isotopes (F-18, C-11, N13 and option for solid targets), two full GMP production laboratories for PET radiopharmaceuticals, one completely dedicated for FDG production and second includes production of other F-18, C-11, N-13, Ga-68 radiopharmaceuticals, and Cu-64 in the future. The third production laboratory that is part of the same GMP production site is dedicated for small scale production of therapeutical radiopharmaceuticals for clinical trials and investigation. The integrated part are two QC laboratories and one research laboratory for preclinical investigation including toxicological studies of new radiopharmaceuticals. The Department of Molecular Imaging is located in the second floor with two PET/CT cameras dedicated for clinical investigation and advanced biomedical imaging in humans using extensive suite of state-of-the-art internally produced radiopharmaceuticals as imaging tools. This institution will be a full partner to the physicians in the patient care not only in the country, but also in the region, as was the most important planned outcome. Providing all an opportunity can be performed only in an institution containing cyclotron and GMP production laboratories

International Conference on Clinical PET-CT and Molecular Imaging (IPET 2015): PET-CT in the Era of Multimodality Imaging and Image-Guided Therapy following always the new trends in development of new radiopharmaceuticals. PET in that condition may serve as a magnet for recruitment in many areas and promote national and international

interdisciplinary cooperation, to provide university educational opportunities for master, doctoral and postdoctoral studies, specialties in nuclear medicine, radiopharmacy and medical physics with distinctive strength in education and research and an entrepreneurial dimension.

Conclusion: The University Institute for Positron Emission Tomography in Skopje serves both as a model for future and more widespread use of PET. Unique capabilities of PET may facilitate grant opportunities.