Mini Course 3
Technologists Committee
Wednesday, October 19, 10:15-11:15

Session Title
Digital PET/CT

Chairpersons
Paolo Turco (Padua, Italy)
Luisa Roldao Pereira (Kent, United Kingdom)

Programme

10:15 - 10:45 **Ivo Rausch** (Vienna, Austria): Innovations in PET/CT: Changing from analogue to digital systems

10:45 - 11:15 **Barbara Malene Fischer** (Copenhagen, Denmark) & **Eunice Sànchez Saxtoft** (Copenhagen, Denmark): Large FOV Digital PET/CT protocols

Educational Objectives

1. Describe technological developments of Digital PET/CT since its introduction
2. Understand the new clinical applications in Digital PET/CT
3. Describe the state of the art in the use of Digital PET/CT
4. Identify the potential applications of Large FOV Digital PET/CT

Summary
The last years have seen the development of digital PET/CT systems, with higher sensitivity, coincidence timing and spatial resolution, thanks to the transition from conventional photomultiplier tubes to silicon photomultiplier tubes.

The industry has invested many resources in this technology and the demand of PET/CT exams by clinicians is constantly increasing. The transition from traditional to digital detectors has allowed an improvement of the acquisition protocols by reducing both PET and CT acquisition times, increasing the exam volume but also the quality of the images.

Moreover, it has been demonstrated that digital PET/CT reduces patient exposure in terms of radiopharmaceutical injection, with a higher resolution, optimising the global dose delivered.

The first talk will address the physical aspects of this new technology, describing the difference from the traditional PET/CT and its future development. The second talk will enlighten the clinical aspects and clinical benefits of the state of art digital PET/CT: the large axial field-of-view PET/CT. Indeed, the improved physical performance is translated into a more efficient and effective clinical use of these technologies, also thanks to the extended field of view of this last generation system.

Key Words
Photomultipliers, Positron Emission Tomography, Digital PET/CT, multimodality imaging, clinical benefits