Special Symposium Session 1

EARL

Sunday, October 5, 09:45 – 11:15

Session Title

Clinical Implications of EARL PET/CT Accreditation Standards 2 and a new 177Lu SPECT/CT Accreditation: Results, Specifications, and Future Directions

Chairpersons

John Dickson (London, United Kingdom)
Christof Deroose (Leuven, Belgium)

Programme

09:45 – 10:10 **Ronald Boellaard** (Amsterdam, Netherlands): Clinical Implications of EARL PET/CT Accreditation Standards 2: Enhancing Diagnostic Quality and Patient Outcomes

10:10 – 10:35 **Ana Denis-Bacelar** (Teddington, United Kingdom): 177Lu SPECT/CT Accreditation: Results, Specifications, and Future Directions

10:35 – 11:15 Q&A

Educational Objectives

This session will provide an in-depth exploration of both **EARL PET/CT Accreditation Standards 2** and **177Lu SPECT/CT Accreditation**, emphasizing their clinical implications, practical applications, and future developments. By the end of this session, participants will:

1. **Understand EARL PET/CT Accreditation Standards 2:**
    - Gain a thorough understanding of the updated accreditation standards and their clinical significance in ensuring the highest quality PET/CT imaging.
    - Learn how these standards contribute to improving diagnostic accuracy, reproducibility, and patient outcomes.
    - Explore how adherence to EARL accreditation standards affects clinical decision-making and the integration of PET/CT imaging in patient management.
    - Discuss case studies illustrating the benefits and challenges of maintaining accreditation.
2. **SPECT/CT Accreditation Overview:**
    - Gain insight into the latest specifications and results from 177Lu SPECT/CT accreditation.
    - Understand how accreditation influences image quality, clinical utility, and the standardization of 177Lu SPECT/CT imaging protocols.
    - Learn strategies for achieving and maintaining 177Lu SPECT/CT accreditation in clinical settings.
    - Discuss the practical implications of meeting these standards, including workflow integration and quality assurance.

3. **Explore Future Directions in PET/CT and 177Lu SPECT/CT Accreditation:**
    - Discuss upcoming trends, innovations, and potential changes in accreditation processes.
    - Identify emerging technologies and techniques in PET/CT and 177Lu SPECT/CT imaging that may shape future accreditation standards and clinical practices.
    - Examine common hurdles in achieving and maintaining accreditation for both PET/CT and 177Lu SPECT/CT.
    - Learn practical solutions and best practices to navigate these challenges while ensuring high-quality patient care.

Summary

Standardisation of imaging procedures and imaging systems performances are essential for the use of quantitative PET, for e.g., diagnosis, prognosis, response prediction, and use of quantitative SPECT/CT for personalized dosimetry with radionuclide therapy. Any quantitative imaging biomarker requires they are reproducible, i.e. providing the same read when a patient would have been scanned on different systems and in different sites. The aim of the EARL accreditation programs are to ensure sufficient imaging system performance reproducibility allowing to acquire data that can be pooled in multicentre studies and/or can be translated into clinical research and care. These accreditation programs go hand in hand with published EANM guideline to assure that standardized imaging procedures are followed. The accreditation programs and EANM guideline therefore assures that nuclear medicine studies are performed in a quantitative reproducible manner such that they can be used to develop and apply diagnostic, prognostic and predictive (statistical model) that use quantitative metrics, such as SUV and total metabolic tumour volume or extensive radiomic features. Reproducibility is also key in establishing quantitative criteria to identify patients eligible for radionuclide therapy and/or to verify and optimize dose to organs and tumours based on 177Lu SPECT/CT imaging. In this session we will address the importance of imaging system performance harmonization and how EARL has set up and deploy accreditation programs.

Key Words

Imaging biomarkers; PET/CT; quantitative SPECT/CT; accreditation; standards