Learn & Improve Professional Skills (LIPS) Track – Session 11
Oncology & Theranostics Committee
Tuesday, October 18, 15:00-16:30

Session Title
Tricky Cases in Prostate Imaging

Chairperson
Sofia Carrilho Vaz (Lisbon, Portugal)
Lioe-Fee de Geus-Oei (Leiden, Netherlands)

Programme

15:00 - 15:20 **Mireia Castillo-Martin** (Lisbon, Portugal): PSMA Characteristics and Immunohistochemistry Expression

15:20 - 15:40 **Patrick Pilkington Woll** (Lima, Peru): PSMA Radiopharmaceuticals, Physiological Distribution and Pathologic Uptake

15:40 - 16:00 **Fleur Kleiburg** (Leiden, Netherlands): PSMA Uptake in Non-Prostate Tumours

16:00 - 16:20 **Laetitia Vercellino** (Paris, France): PSMA Uptake in Non-Oncologic Entities

16:20 - 17:00 Discussion

Educational Objectives
1. Knowing PSMA physiologic biodistribution
2. Evaluating examples of prostate cancer lesions with high and low PSMA expression
3. Discussing on discordant findings between pathology and Nuclear Medicine
3. Identifying uncommon metastatic spread of prostate cancer
4. Detecting non-prostate cancers and non-oncologic lesions with PSMA expression

Summary
PSMA-ligand PET/CT has an important impact on prostate cancer (PCa) clinical management. It provides accurate neoplastic staging and reveals uncommon metastatic spread. Although there are different PSMA-ligands available for imaging, fluorinated compounds seem to perform better.
PSMA biologic function in PCa is not fully known yet. Its expression is nearly 100-fold higher in the prostate gland compared to other tissues and is 10-fold higher in PCa than in healthy prostate tissue. Its expression is further increased in high-grade, dedifferentiated, metastatic, and castration resistant PCa. On the other hand, densely sclerotic bone metastases, some variants of PCa such as ductal type and neuroendocrine differentiation show reduced PSMA expression.
Despite its name, PSMA is not specific for PCa. Currently, it is accepted that PSMA has a high affinity for endothelial neovasculature of both malignant and benign entities, opening a wider possibility of diagnostic and therapeutic strategies.
PSMA expression determined by PSMA-ligand PET/CT and immunohistochemistry may diverge, a possible reason may be the different anti-PSMA antibodies used in each modality.

Key Words
PSMA, PET, immunohistochemistry, neovasculature, prostate