



Special Session

Oncology & Theranostics Committee

Tuesday, October 20, 08:00–09:30

Session Title

Imaging Companions for Non-Radioactive Targeted Therapy: Is There a Role?

Chairpersons

Lioe-fee de Geus-Oei (Leiden, Netherlands)

Christophe Deroose (Leuven, Belgium)

Programme

- 08:00–08:20 **Christophe Deroose** (Leuven, Belgium): Patient Preparation: PET Imaging Companions for Antibody-Drug Conjugates and Other Targeted Agents: Current Evidence and Future Perspectives
- 08:20–08:40 **Françoise Kraeber-Bodéré** (Nantes, France): PET Imaging in Lymphoma and Myeloma Patients Treated with Chimeric Antigen Receptor T-Cells
- 08:40–09:00 **Gary Ulaner** (Irvine, California, United States): Estrogen Receptor (ER)-Targeted PET for Guiding ER-Targeted and Endocrine Therapy
- 09:00–09:20 **Géraldine Gebhart** (Brussels, Belgium): HER-2 PET: A Promising Companion for Anti HER-2 Therapy
- 09:20–09:30 **Discussion**

Educational Objectives

1. To raise awareness on the potential of molecular imaging to act as theranostic therapy guide for non-radioactive oncological therapies such as monoclonal antibodies, antibody-drug conjugates (ADCs) and chimeric antigen receptor (CAR) T cells.
2. To summarize the data regarding [18F]FDG PET and targeted molecular PET tracers as prognostic and predictive biomarkers in CAR T treatment of lymphoma and multiple myeloma.
3. To demonstrate the usefulness of estrogen receptor-targeted PET in the use of endocrine therapies in patients with hormone receptor-expressing cancer (e.g. breast cancer).
4. To provide an overview on clinical data on HER-2 PET as a theranostic selection tool for HER-2 targeting monoclonal antibodies and antibody-drug conjugates.

Summary

Theranostic imaging has become a cornerstone in the development and clinical practice of radiopharmaceutical therapy. Molecular imaging with PET has also a great potential to guide non-radioactive oncological therapies. This session will focus on the usefulness of PET molecular imaging to help in the guidance of these non-radioactive molecularly targeted oncological therapies. An overview of current and emerging oncological therapy options and potential PET imaging strategies for their molecular targets will be provided. Specific clinical applications will be discussed. These include the use of [18F]FDG therapy in hematological cancer patients (lymphoma and multiple myeloma) treated with CAR T, a rapidly expanding novel therapeutic strategy. The potential of guiding estrogen therapy in a.o. breast cancer patients through the use of estrogen receptor-targeting PET (with e.g. [18F]fluoroestradiol) will be presented. Molecular imaging of HER-2 with different radiopharmaceutical strategies will be presented and the predictive potential for anti-HER-2



antibodies and ADCs will be discussed.

Key Words

Monoclonal Antibody; Antibody Drug Conjugate; ADC; Chimeric Antigen Receptor T Cell; CAR T-Cell; Estrogen Receptor; [18F]Fluoroestradiol; HER-2, PET; Non-Radioactive Theranostics; Breast Cancer; Myeloma; Lymphoma.