



CME Session 7

TMI&T Committee

Monday, October 19, 15:00–16:30

Session Title

How Can You Monitor the Immune System Activity in Patients?

Chairpersons

Angela Collarino (Rome, Italy)

Philippe Garrigue (Marseille, France)

Programme

- 15:00–15:20 **Marleen Ansems** (Nijmegen, Netherlands): Fundamentals of Tumour Microenvironment and Immune Response
- 15:20–15:40 **Timo de Groof** (Brussels, Belgium): Imaging of the Tumour Microenvironment: Key Breakthroughs and Remaining Hurdles
- 15:40–16:05 **Johannes Schwenck** (Tübingen, Germany): PET Imaging of the Immune Response in Cancer Immunotherapy
- 16:05–16:30 **Willemien Menke-van der Houven van Oordt** (Amsterdam, Netherlands): Immune Therapy Tracers – Ready for Prime Time? View from the Clinician

Educational Objectives

1. Describe the key components of the tumour microenvironment and their roles in shaping immune responses in cancer.
2. Evaluate current and emerging imaging techniques used to visualise immune activity and the tumour microenvironment, including their strengths and limitations.
3. Assess how imaging-based biomarkers can support treatment planning, monitor immunotherapy effectiveness, and help identify high-risk patient groups.

Summary

This CME session explores state-of-the-art strategies for assessing immune activity in cancer, with a focus on the tumour microenvironment and emerging imaging technologies. The session opens with the fundamental immunobiology of the tumour microenvironment, highlighting how immune–tumour interactions shape disease progression and therapy response. Recent breakthroughs in imaging the tumour microenvironment are then reviewed, detailing advances that enable visualisation of cellular and molecular processes in vivo and the hurdles that still limit clinical translation. Clinical PET imaging approaches to monitor immune responses during cancer immunotherapy are discussed, emphasising biomarker development and early treatment assessment. The session concludes by illustrating how imaging can support immune-therapy planning and identification of high-risk patients, opening opportunities for more personalised and adaptive treatment strategies.

Key Words

Tumour Microenvironment; Immune Monitoring; Immuno-Imaging; Imaging Biomarkers; Immune Therapy Planning; High-Risk Patient Identification