

## **Pitfalls & Artefacts 4**

Oncology & Theranostics + Inflammation & Infection Committee

**Friday, October 23, 16:55-18:25**

### **Session Title**

**Interpretation of Response Monitoring During Immune Therapy**

### **Chairperson**

Giorgio Treglia (Switzerland)

### **Programme**

- 16:55 - 17:24 James O'Connor (Manchester, United Kingdom): Current Systems for Response Classification
- 17:24 - 17:53 Egesta Lopci (Milan, Italy): The Role of <sup>18</sup>F-FDG-PET Monitoring During Immune Therapy
- 17:53 - 18:22 Walter Noordzij (Groningen, Netherlands): Pitfalls in Interpretation of Response to Immune Therapy

### **Educational Objectives**

1. Become familiar with current criteria of response classification in immune-oncology
2. Obtain practical examples of potential pitfalls and drawbacks in response assessment during immunotherapy
3. Understand utility and reading recommendations with metabolic imaging

### **Summary**

The success of immune checkpoint inhibitors (ICI) has significantly changed the therapeutic landscape in oncology. By enhancing host immune activity, these immunomodulatory agents are associated with a spectrum of adverse effects related to the mechanism of action that may differ from other systemic therapies in patterns of response and temporal profile of efficacy. Response criteria should therefore adapt to the new mechanisms of action and opportunely describe response patterns through a continuous review of imaging interpretation. Understanding and recognition of the unconventional patterns of response would help in a more accurate interpretation of changes in tumor burden, objective response and disease progression. Besides morphologic criteria, expressed by RECIST, irRC, irRECIST, and iRECIST, and since the recognition of their limitations, recent data in literature suggest the use of metabolic imaging with FDG PET for response assessment during ICI.

Image interpretation however must face several pitfalls and sources of error due to inflammatory side effects, which are often termed immune-related adverse events (irAEs). Although ICI can usually continue in case of mild irAEs with close monitoring, moderate to severe irAEs may be associated with severe decline in organ function, quality of life, and fatal outcomes. Therefore, early detection, timely management and follow-up are of paramount importance.

In the current session, by means of interactive case readings, attendees will have the opportunity to get familiar with current systems for response classification during ICI, will receive practical examples of interpretation errors and pitfalls during response assessment, and will obtain recommendations on optimal timing and reading interpretation with metabolic imaging.

**Key Words**

Immunotherapy; Checkpoint inhibitors; Response assessment; Predictive factors; Pseudoprogression; Immune-related adverse events; Metabolic response; Morphological criteria