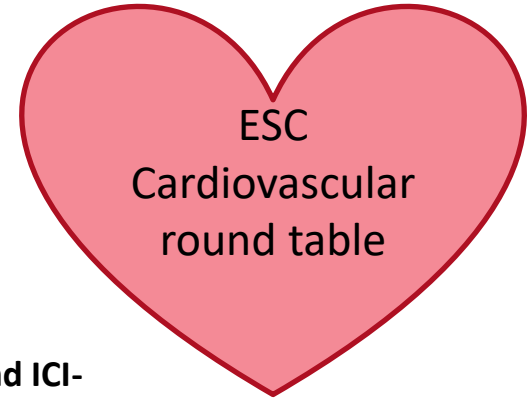
Breakout session 7

Diagnostic Challenges and Technological Opportunities in Heart Failure and Immunotherapy-Related Myocarditis



Chair: Dr Eigil Samset (GE Helathcare)

Rapporteur: Dr Mariana Mirabel

- **Identify current limitations in the pathways for early detection of HF and ICI-myocarditis, focusing on the interpretation of ECG, biomarkers, echocardiography and CMR**

- **Highlight technological and AI-driven opportunities that can enhance diagnostic precision, enable earlier recognition of damage and support more consistent decision-making in cardio-oncology**

Background : Heart Failure and Immunotherapy-Related Myocarditis: A Converging Challenge

ESC Council Cardio-Oncology

- Heart failure (HF) remains a major cause of morbidity and mortality worldwide
- Bi-directional cardio-oncology; cancer therapy-related cardiac dysfunction; and comorbidities
- Immune checkpoint inhibitors (ICIs) have transformed oncology outcomes
- At the expense of immune related adverse events including ICI- myocarditis : a spectrum; severe cases are rare (~1%), high early mortality
- Need for early, accurate diagnosis to guide timely and personalized treatment

Key Diagnostic Challenges

ESC Council Cardio-Oncology

- Lack of awareness / education of current and future medical doctors
- Difficulties in capacity, lack of access to standard of care and to expertise (technical and human)
- Lack of shared medical information (data management, data sharing, policies)
- Standardization of definition for cancer therapy related cardiovascular toxicities: thresholds, clinical relevance, interdisciplinary language.
- Lack of specific biomarkers for specific conditions as ICI-myocarditis
- Complexity of granularity, of multidimesionality

Key Take-Home Messages

- Improve diagnostic capacities
- Embark digital solutions and AI in imaging and complex models
- Ease workload, increase precision and consistency
- Invest research in the field
- Ensure widespread use of new emerging tools