CME Session 10

Thyroid Committee
Tuesday, October 20, 09:45–11:15

Session Title

Beyond Iodine: The New Era of Targeted Radiopharmaceutical Therapy for Thyroid Disease

Chairpersons

Petra Petranović Ovčareček (Zagreb, Croatia)
Murat Tuncel (Ankara, Türkiye)

Programme

09:45–10:05 **Alfredo Campennì** (Messina, Italy): Radioiodine Therapy: Still Going Strong
10:05–10:25 **Friederike Eilsberger** (Marburg, Germany): Understanding and Overcoming Radioiodine Resistance
10:25–10:50 **Murat Tuncel** (Ankara, Türkiye): Theranostics in Medullary Thyroid Carcinoma: Where Are We Now?
10:50–11:15 **Désirée Deandreis** (Villejuif, France): Emerging Radiopharmaceuticals Beyond I-131: NIS and Alternative Targets

Educational Objectives

1. Review the indications, preparation, and activity/dosing approaches for radioiodine therapy in differentiated thyroid cancer.
2. Define radioiodine-refractory disease and the mechanisms behind iodine resistance, including redifferentiation strategies and their clinical application.
3. Explore novel radiopharmaceuticals targeting NIS and alternative molecular pathways for radioiodine-refractory disease.
4. Discuss the theranostic approach to medullary thyroid carcinoma, including current data and emerging therapeutic targets.

Summary

Radioiodine remains the mainstay of treatment for differentiated thyroid cancer, but a significant proportion of patients will eventually stop responding and develop radioiodine-refractory disease. This session offers a practical overview of radiopharmaceutical therapy across the disease spectrum, starting with the basics of I-131—who should receive it, how to prepare patients, and what determines a good outcome. From there, the session moves to radioiodine-refractory disease, covering why tumours lose iodine avidity and whether redifferentiation can restore it, as well as newer radiopharmaceuticals targeting NIS and other molecular pathways. The session closes with a discussion of medullary thyroid carcinoma and the growing role of theranostics, covering both established approaches and targets still under investigation.

Key Words

Radioiodine Therapy; Differentiated Thyroid Cancer; Radioiodine-Refractory Disease; Redifferentiation; Sodium-Iodide Symporter; Targeted Radiopharmaceuticals; Theranostics; Medullary Thyroid Carcinoma