CME Session 13
Dosimetry Committee
Wednesday, October 8, 08:00 – 09:30

Session Title
Challenges in Red Bone Marrow Dosimetry

Chairpersons
Caroline Stokke (Oslo, Norway)
Peter Bernhardt (Gothenburg, Sweden)

Programme
08:00 – 08:15 **Peter Bernhardt** (Gothenburg, Sweden): Introduction to red marrow dosimetry
08:15 – 08:40 **Pablo Minguez Gabina** (Barakaldo, Spain): Small-scale dosimetry
08:40 – 09:05 **Johannes Tran-Gia** (Würzburg Germany): Image-based versus blood-based dosimetry
09:05 – 09:30 **Marta Cremonesi** (Milan, Italy): Absorbed dose-toxicity correlations

Educational Objectives
1. To understand the importance and challenges of small-scale red marrow dosimetry.
2. To gain insight into the differences between blood- and image-based red marrow dosimetry, as well as the methodological challenges involved.
3. To acquire knowledge of the current understanding of haematological toxicity during radiopharmaceutical therapies.

Summary
This CME session explores key challenges in red marrow dosimetry, focusing on the complexities of accurately estimating absorbed doses at small scales, which may be necessary to understand treatment outcome. It highlights the differences between blood-based and image-based dosimetry approaches, addressing their respective advantages, limitations, and methodological challenges. Particular emphasis is placed on the difficulties in standardizing red marrow dosimetry techniques, given variations in patients' red marrow composition and radiopharmaceutical distribution.

Furthermore, the session examines the current understanding of haematological toxicity associated with radiopharmaceutical therapies. It reviews dose-response relationships and the factors influencing toxicity risks, providing insight into strategies for improving patient safety.

Key Words
Red marrow dosimetry; Small-scale dosimetry; SPECT/CT; Blood-based dosimetry; Image-based dosimetry; haematological toxicity; dose-response relationship