



### Special Track Session 10

Radiobiology Initiative

**Tuesday, October 22, 09:45 - 11:15**

#### Session Title

**Debate: What is/could be the contribution of radiobiology to clinical practice?**

#### Moderators

**Ann-Christin Eder** (Freiburg, Germany)

**Jean-Pierre Pouget** (Montpellier, France)

**Katarina Sjögren** (Lund, Sweden): Life is linear or linear quadratic

**Stefano Fanti** (Bologna, Italy): Clinical response is more than tumor absorbed dose; dosimetry guided TRT needs to be based on sound clinical evidence

**Katharina Lückerrath** (Essen, Germany): Radiobiology is the missing link between dosimetry and treatment response: Biological parameters need to be considered in order to envisage the most effective therapeutic strategies and combinations and hope to achieve a complete response

#### Educational Objectives

1. Role of dosimetry in understanding the radiobiology of TRT
2. Understanding clinical response from a radiobiological point of view
3. Understanding how to include radiobiology and dosimetry in treatment planning

#### Summary

The aim is to demonstrate the complexity of the radiobiological response to TRT. There will be two or even three schools of thought. The first is that dosimetry is not useful, is time-consuming and in any case should not be systematized. The second school of thought is that only knowledge of the dose absorbed by the organs can predict the effectiveness of the response/toxicity of the treatment. The last school of thought believes that while dose is an indisputable parameter, it alone does not explain all the biological effects of TRT and a more specific radiobiology needs to be developed that takes the targeting by TRT into account.

#### Key Words

Radiobiology; dosimetry; treatment planning; dose-response; combinations