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Abstracts



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Planning a new international comparison on EPR dosimetry with tooth enamel: a EURADOS WG10 proposal.

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Introduction

Between 1994 and 2011, several inter-laboratory comparisons (ICs) on EPR/tooth enamel dosimetry were conducted with the aim of validating the method. Since seven years have passed from the last exercise, EURADOS WG10 has planned to propose a new IC which will be shown and opened to discussion in this presentation, starting from a review of the past ICs and including new developments of the method.

Methods

A review of the past ICs was performed. Lessons learned, weakness and gaps were identified, focusing on the steps of the procedures used by the participants and the design of the exercise itself.

On this basis, a survey was sent around by email, consulting the EPR laboratories participating in the past ICs. The survey included questions on the instrumentation, protocol and expertise for EPR dosimetry with tooth enamel. The results of this survey will be shown as a state of the art of the EPR/tooth enamel dosimetry laboratories and will serve as basis to design the structure of the new IC.

Results

The idea of organizing a new IC arises from the need of a performance re-check for those laboratories that took part in the past ICs and of an involvement of new laboratories that during the last years have developed an EPR method whose performances should be tested for the first time.

In the last years, new techniques and methods have emerged that should be tested, at least in a preliminary way, for the first time, e.g., it would be desirable to carry on a validation of innovative EPR/tooth enamel methods, like those involving the use of Q-band or L-band microwaves. One of the important outcomes of the preliminary consultation about availability and capabilities of the EPR laboratories is that most of the consulted laboratories are willing to participate in a new IC.

Conclusion

A review of the past ICs and lessons learnt as well as a presentation of the planned EURADOS WG10 IC will be shown. The hypothesized structure of the new exercise will be based on the results of the preliminary consultation and of the specific needs and issues arising from innovative EPR/tooth enamel methods.

References

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