QA programme in external radiotherapy in Romania – status and perspective

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Abstract

Recognizing the importance of quality assurance in radiotherapy and the need to make access to radiation standards traceable to the international measurement system for every radiotherapy center, the Romanian national secondary standard dosimetry laboratory (SSDL) has started in 1999 – together with IAEA - a national quality audit programme in all the centers for external radiotherapy from Romania.

At present, there are 17 radiotherapy centers in Romania, and a total of 19 theletherapy units and 4 LINCs.

The programme has 3 phases: the first phase was to organize a survey in all radiotherapy centers, to collect general information on their radiotherapists, medical physicists, type of equipment, dosimeters, etc. Following the survey, a quality assurance network was set up, and on-site dosimetry reviews were arranged according to a suitable timetable.

The second phase consisted in performing the reference dosimetry and the calibration of the equipment. Then, a quality audit system based on mailed TLDs has been applied to all radiation beams produced by cobalt-60 therapy units and medical accelerators, in order to identify discrepancies in dosimetry larger than +/- 3%. At the same time, the beam calibration performed by the SSDLs was verified.

The results of the first survey were analyzed, and corrective actions were taken. A second survey was then organized, based on the mailed TLDs.

This paper presents in detail the entire QA programme, its results, and the actions that are to be taken in order to improve the accuracy and consistency of the dosimetry in clinical radiotherapy in Romania.

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