

A Dosimetric Quality Assurance Program for Radiotherapy Centers in Korea

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Since 1999, a national dosimetric quality assurance program for high-energy photon beams and Co-60 gamma ray beams has been performed annually by KFDA for the radiotherapy centers in Korea. The audit program will be extended to include high-energy electron beams check in 2006. Thermo-luminescent Dosimeters (TLDs) are used for the postal audit service. The uncertainty associated with the determination of the dose for high-energy photons is 1.6 % (k=1). The participating centers are requested to irradiate the TLDs to the absorbed dose to water of 2 Gy at the reference condition. Agreement between a stated dose by a participant and a measured dose by KFDA within $\pm 5\%$ is considered acceptable. 84 external radiotherapy units of 56 radiotherapy centers are operating at the present time in Korea. In 2005, TLD postal dose quality audit was carried out for 92 beam qualities of 55 radiotherapy centers. The audit results showed that 83 out of 92 beams (90 %) satisfied the acceptance limit at the first audit. The second audit was carried out for the centers over the limit and all of them have satisfied the limit. KFDA TLD postal dose quality audit have improved and maintained the accuracy of the dose delivered to the patient as affording an opportunity to check the dose delivery system for the radiotherapy centers. KFDA is developing an audit program in a non-reference condition and in a clinical condition respectively. For supporting the radiotherapy centers in the Asia pacific developing countries, KFDA is developing the training program and establishing the QA network.

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