ABSTRACT

Radiotherapy using Intensity-Modulated Radiation Therapy (IMRT) requires accurate dose verification through Patient-Specific Quality Assurance (PSQA). This study aims to analyze the indeks gamma as an indicator of PSQA acceptability in cervical cancer IMRT using an Electronic Portal Imaging Device (EPID) on a Halcyon LINAC, and to evaluate the Gamma Passing Rate (GPR) based on AAPM TG-218 criteria. This study involved 20 patient datasets, with indeks gamma analysis performed using 3%/3 mm and 3%/2 mm criteria and a 10% dose threshold. The evaluated parameters included GPR, average gamma, Maximum Gamma, Maximum Dose Difference, as well as Tolerance Limit (TL) and Action Limit (AL). The results showed mean GPR values of 99,97% (3%/3 mm) and 99,95% (3%/2 mm), all exceeding the 95% acceptance threshold. Low average gamma values (0,20 and 0,24) indicated minimal deviations, while the low Maximum Dose Difference (mean 0,50 CU) demonstrated good dose agreement. High TL and AL values indicated that the PSQA system was stable and under statistical control. In conclusion, the indeks gamma is an effective indicator for PSQA acceptability, and all treatment plans met clinical acceptance criteria.

Keywords: *indeks gamma, PSQA, IMRT, EPID, cervical cancer, AAPM TG-218*