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Evaluation of Quality Assurance Worksheet for the Radiation Treatment Planning System

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The periodic Quality Assurance (QA) of radiation treatment related equipments is important one, but quality assurance of the radiation treatment planning system (RTPS) is still not sufficient rather than other related equipments in clinics. Therefore, this study will present and test the periodic QA program to compare, evaluation the efficiency of the treatment planning systems. This QA program is divided to terms for the input, output devices and dosimetric data and categorized to the weekly, monthly, yearly and non-periodically with respect to the job time, frequency of error, priority of importance. CT images of the water equivalent solid phantom with a heterogeneity condition are input into the RTPS to process the test. The actual measurement data are obtained by using the ion chamber for the 6 MV, 10 MV photon beam, then compared a calculation data with a measurement data to evaluate the accuracy of the RTPS. Most of results for the accuracy of geometry and beam data are agreed within the error criteria which is recommended from the various advanced country and related societies. This result can be applied to the periodic QA program to improve the treatment outcome as a proper model in Korea and used to evaluate the accuracy of the RTPS.

Keywords : Radiation Treatment Planning System (RTPS), Quality Assurance (QA)