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## **The Study of Availability Comparison of Gafchromic and Radiographic Film for High Precision Radiation Therapy(HPRT)**

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Recently, the trends of the techniques of radiation therapy for High Precision Radiation Therapy(HPRT) are including Intensity Modulated Radiation Therapy(IMRT), Stereotactic Radiotherapy(SRT, especially, CyberKnife based treatment), Image Guided Radiation Therapy(IGRT), Movement Tracking Radiation Therapy(MTRT), and Total Animal Body Irradiation(TABI). The purpose of radiation treatment technology is often asked that 'How can we do deliver high dose of radiation that is considered the target position and shape accurately and precisely?'. In addition, 'How can we expose as low as radiation to important critical organ and normal tissue at the same time?'. It takes a long time and so complicated to increase previously the precision of radiation exposure with an accurate and precise verification. So, we can achieve to our goal by precise verification of the radiation dose distributions. The means of the verification of dose distribution is very important method currently. Thus, it is just important trends of complicated and various radiation treatment technologies with film dosimetry. In this work, we use two types of films(for high dose), Radiochromic film(ISP Gafchromic EBT) and Radiographic film(KODAK EDR2), analyzed dose distributions of HPRT's modalities : IMRT, CyberKnife based SRT, IGRT, MTRT and TABI with the protocols, respectively. Additionally, we compare the results between calculations and measurements in IMRT and CyberKnife based SRT. As the results of the studies, we achieved the useful protocols in respective modality, which are relative to kinds of scanners such as Flat-bed type(flatbed color scanner, EPSON) and CCD type(film digitizer, VIDAR). In conclusion, we have satisfied results and find out HPRT's two kinds of availabilities.

**Keywords :** HPRT, CyberKnife, Film Dosimetry