

Webinar: Quality assurance of the Elekta Unity MR-Linac: a clinical experience

Date: 2020-11-19

QUESTION	ANSWER
Can the BEAMSCAN MR water phantom also be used for absolute dose measurements, or is it necessary to use a small water phantom for these measurements?	The dimensions of the BEAMSCAN MR are not allowing an isocentric measurement in 10 cm water depth from 90 degrees.
2 Which ionization chambers can be used for reference dosimetry?	The chamber, which is primarily used, and for which there are the most publications, is the Farmer Chamber. But other chambers are, at the moment, beeing characterized for
4 Is it possible to treat patients with VMAT on the Elekta Unity system? Are there any technical challenges or limitations which make these treatments impossible?	Another Unity user group has shown, that there are no technical challenges. It has to be implemented in the clinical system however. Some limitations: Leaf travel in sup-inf is not ideal for VMAT. Dose rate cannot be varied.
5 How much staff is needed on the MR Linac for a patient treatment?	Depending on your regulatory administration, 2 RTT+ (1 physician) + (1 physicist). The staff in brackets is only present at certain steps.
7 The Farmer chamber 30010 is not waterproofed, I think the Farmer chamber 30013 is used for absolute/reference dosimetry in a waterphantom, right?	s Yes, the T30013 is the waterproof chamber used for absolute dosimtry in water phantoms. The T30010 can only be used in solid state phantoms.
8 What is the field size you used for MLC film check?	We use a film size of (60 X 25 cm)
9 How many patients were treated with Adapt to shape workflow?	Over the two years of treatment we treated on average 1/4 of all fractions using ATS. The use of ATS has increased over time.
10 What beam angles do you use for treatment usually? Do you go through the couch? Have you investigated the couch attentention? We found large deviation between TPS and measured data through the couch.	We do not irradiate through high density regions of the couch due to the named concerns about uncertainties. Depending on the position of the target the avoided gantry angles range from 100-125° and 280'-255°.
11 How often do you use films to check MLCs? And do you analyse the images electronically or you just visually check for discrepancies?	We check the MLCs with film on a monthly basis. Currently, films are analysed visually, but a software tool for quantitative anaylsis is being implemented.
12 Does the field size limitations effect clinically for rectum cases?	Maximum sup-inf field size sometimes limits treatments for rectum, head-and-neck and cervical carcinomas.
13 Thank you for the presentation - Are you using the QA platform for the STARCHECK and OCTAVIUS.	For the STARCHECK we use it, for the OCTAVIUS not.
14 Could you tell what dosimetric protocol are you using for dose monitor units calibration?	Isocentric measurement for gantry 90° in 10 cm water depth using a PTW Farmer Chamber with a parallel orientation with respect to the magnetic field. Dose per Monitor Unit is 1cGy/MU.
15 Is the daily/weekly MR QA analysed using Elekta software or third party software automatically?	The standard MR QA is automatically analysed on the Philips console.
16 What types of ionization chambers can use with BEAMSCAN MR?	Please refer to the PTW MR brochure listing all MR compatible detectors.
17 With which frequency do you use your watertank and STARCHECK for regular QA, since the setup of a tank will take a serious amount of time?	STARCHECK Maxi is used at least monthly for regular QA. The watertank is used for regular QA on a at least a yearly basis, The watertank is used for research questions and after system upgrades or larger maintenance procedures.