AbstractID:9510Title:Co mmissioning IMSure3.1 for IMRTSe condCalculation Utility Program

Purpose: A program for IMR T QA for d ose po int c alculation (IMS ure Ver 3.1 from StandardIma ging) was co mmissionedfor ap plicationsa tou rclinic.Thepurpos eoft his study w as to set out acc eptability cr iteria of IMRT plans, a nd to det ermine t he percentage discrepa ncy ra nge of po int dose ca lculation between IMSure Q A software and Eclipse t reatment pla nning system from Varian Medical Sys tems. **Method a nd Materials:** This program us es the patented 3 -source m odel algorithm for calculating a pointdoseinwater f orIMR Tp lans. The datafor output factors and scatter factorswe re measuredusi nga PinPo intion chambe rwith anac tivevo lumeo f 0.01cm ^{3}, anda brass capw asusedforme asurementinair.Th e6 MV be am was commissionedw ithavalue of 0.1 4 cm for th e dos imetric l eaf ga p which ga ve the closest ag reement w ith t he treatment pl anning s ystem. **Results:** Twenty p atients p lanned on Ec lipse w ith 7–field IMRTf orheadandn eckwere transfe rred usingDICOMRTto IMSur e.Dosecalculation at iso centre was as sessed with I MSure and compared with th e treatment pl anning results.Percent agedi screpancyinth eiso centredo seca lculation rangedfr om -2.0%to 2.0% witha standardd eviationof1%.Inother wo rds, theagre ementin isocentred ose calculation for 13 pa tients between the tr eatment plan ning sys tem a nd the IMRT QA software was w ithin +/ - 1%. Measu rements with a n io n chamber and a c ylindrical phantom were also pe rformed, an d found to be co nsistent wi th the abov e resu lts. **Conclusions:** Our in vestigation of th e IMSu re Q A s oftware for IMRT s howed goo d agreement w ith E clipse treatment plan ning system to within 1% for 68% of pa tients sampledinourst udy.Ourre sultssh owed thatIMSur eso ftwareca nbe areli abletoolfor IMRTQ Aw ithdi screpancieswith Eclipseno texc eeding+ /-2%.