

OAR dose tolerance. No relationship was identified between the % difference of OAR volumes and D2cc OAR % variations.

Conclusion: Patients treated with 45Gy in 25 fractions EBRT + 21Gy in 3 fractions VBT are at greater risk of breaching OAR dose tolerances when using a single planning scan for all treatments. There is no significant relationship between the % difference of bladder, rectum, sigmoid and small bowel volumes and % dose difference. The OAR dose variation between each scan is most likely due to the unpredictable day to day movement of the structure and cannot be replicated by standardised organ filling procedures. Departmental protocols have been amended to CT plan this subgroup of patients before each treatment fraction to take into account position of structure at that time. Use of a multichannel applicator could also help minimise the dose to these structures.

EP-1966

Late toxicity outcomes of CT-based brachytherapy planning for locally advanced cervical cancer

J. Tang¹, B.A. Choo¹, V. Koh¹, J. Low², J. Ng², A. Illancheran², Y. Lim³, S.E. Lim³, D. Tan³

¹National Cancer Institute Singapore, Radiation Oncology, Singapore, Singapore

²National Cancer Institute Singapore, Gynaecology, Singapore, Singapore

³National Cancer Institute Singapore, Medical Oncology, Singapore, Singapore

Purpose or Objective: A report of late rectal and bladder toxicity outcomes of a computed tomography(CT)-based image guided brachytherapy(IGBT) technique for treatment of cervical cancer.

Material and Methods: Between 2008-2014, 95 women with International Federation of Gynecology and Obstetrics stage IB to IVA cervical carcinoma treated with definitive concurrent cisplatin based chemotherapy and external beam radiation therapy (EBRT) 50.4Gy in 28 fractions followed by 3-4 fractions of high-dose-rate (HDR) IGBT was retrospectively reviewed. At each implantation, all patients had a urinary catheter insitu and received bowel enema before undergoing planning CT-simulation. A high-risk clinical target volume (HRCTV) encompassing any visible tumor and the entire cervix, rectum and bladder was contoured on the simulation CT according to Radiation Therapy Oncology Group Gynaecology Contouring Atlas. Prescription dose range of 5.5-7Gy was prescribed to the HRCTV. Doses to Point A, ICRU rectal and bladder points were recorded. Toxicities were recorded using NCI-CTCAE version 3.

Results: The median follow-up time was 29 months. The mean Point A dose was 6Gy (4.6-7.6Gy). The ICRU rectum and bladder points were 4.69Gy (2.5-5.7Gy) and 4.23Gy (1.95-7.2Gy) respectively. 22 patients(23%) and Grade 2 proctitis and 10 patients(11%) had Grade 3 proctitis. 4 patients (4%) had Grade 2 cystitis and 2 patients(2%) had Grade 3 cystitis. No patients had \geq Grade 4 toxicity.

Conclusion: Despite bladder and bowel preparation protocol, late rectal toxicity was significant in a high proportion of patients. Implementation of an interstitial IGBT using the EMBRACE protocol might help to limit these late rectal toxicities.

EP-1967

Preliminary results of a new brachytherapy schedule in postoperative endometrial carcinoma

A. Rovirosa¹, K. Holub¹, A. Herreros², C. Ascaso³, J. Sánchez⁴, G. Oses², J. Mansilla⁵, J. Sola², A. Huguet², S. Garrida², J. Saez², C. Camacho², A. Camarasa², C. Quilis², M. Arenas⁶, S. Sabater⁷, M. Del Pino⁸, J. Pahisa⁸, A. Biete¹

¹Hospital Clinic i Universitari, Radiation Oncology Dpt. Gynecological Cancer Unit., Barcelona, Spain

²Hospital Clinic i Universitari, Radiation Oncology Dpt., Barcelona, Spain

³Faculty of Medicine- University of Barcelona, Public Health Dpt., Barcelona, Spain

⁴Hospital Clinic i Universitari, Economics Dpt., Barcelona, Spain

⁵Hospital Rebagliati, Radiation Oncology Dpt., Lima, Peru

⁶Hospital sant Joan de Reus, Radiation Oncology Dpt., Tarragona, Spain

⁷Hospital General de Albacete, Radiation Oncology Dpt., Albacete, Spain

⁸Hospital Clinic i Universitari, Gynecological Cancer Unit., Barcelona, Spain

Purpose or Objective: To analyze the preliminary results of a new daily high-dose-rate brachytherapy (BT) schedule in vaginal-cuff relapse (VCR) and toxicity in postoperative endometrial carcinoma (EC).

Material and Methods: From September 2011 to December 2014, 102 patients (p) were treated with HDRBT in FIGO stages: IA-30p, IB-39p, II-8p, IIIA-4p, IIIB-1p, IIIC1-8p, IIIC2-5p, IIIC3-1p, IVB-6p. Pathology: 79/102 endometrioid adenocarcinoma and 23/102 other types. Radiotherapy: Group 1: 74p/102p 1 BT fraction of 7Gy after external beam irradiation (mean 45Gy, range 44.0-50.4); Group 2: 28p/102p BT alone by 3 daily fractions of 6Gy. Chemotherapy: 20/102 patients. Toxicity evaluation: RTOG scores for bladder and rectum and the objective criteria of LENT-SOMA for vagina. Statistics: Chi-square and Fisher exact tests.

Results: Mean age (years): Group 1: 65.4 (40-88), Group 2: 66.7 (39-90). Mean follow-up (months): Group 1: 24.48 (8.04-52.56); Group 2: 26.88 (8.76-54.48). VCR: No relapses with the present mean follow-up. Toxicity: Group 1 - early problems (all G1-2) in rectum (5.5%), bladder (6.8%) and vagina (14.9%). Late toxicities: rectum 2.7% (all G1), bladder 0% and vagina 27% (G1-G2). Group 2 -early toxicity: bladder 10.7% (all G1), vagina 28.1% (all G1-G2), rectum 0%; late toxicity was only found in vagina in 17.8% (G1-2). No significant differences were found in toxicities between the two groups.

Conclusion: The present brachytherapy schedule consisting in 1 fraction/7Gy after external beam irradiation and 3 fractions/6Gy administered daily seem a safe regime in terms of local control and toxicity for postoperative EC. These results seem similar to those found in our Hospital in 2 previous series with low dose per fraction and an increased number of fractions. Grant: AECC Foundation

EP-1968

Vaginal mucosal doses in the treatment of cervical cancer using HDR brachytherapy

W. Keough¹, L. Bleakley¹, L. White¹, M. Zahra¹

¹Edinburgh Cancer Centre- Western General Hospital, Oncology, Edinburgh, United Kingdom

Purpose or Objective: To develop a reliable method of determining the radiation dose to the vaginal mucosa in the treatment of cervical cancer.

Material and Methods: Forty six cervical cancer patients were treated with EBRT and HDR brachytherapy therapy from July 2010 - Dec 2013. They received 45Gy in 25 fractions of EBRT to the entire pelvis followed by 3 HDR brachytherapy fractions using a tandem and ring applicator with a HRCTV D90 of 80-85Gy. A volume to represent the vaginal mucosa was obtained by using a non-uniform expansion of the 5mm ring applicator cap; this was expanded by 5.0 mm in all directions except the sup/inf which was expanded by 7.0 mm. In addition, a rectal vaginal (RV) point dose was determined using a point 5.0 mm posterior to the intersection of the superior-posterior junction of the build up cap (figure 1 sagittal view). Total doses were calculated for vaginal volumes of 5.0cc (D5 v), 2.0cc (D2 v), and the RV point. In addition, the slope was calculated for the vaginal mucosa between D5 v and D2 v. Pearson correlation coefficients (with p values = 0.01) were assessed to identify