

CT modified radiotherapy planning in a significant percentage of patients.

PO-0728

Stereotactic Body Radiation Therapy for oligometastatic patients with ovarian cancer

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Purpose or Objective: Ovarian cancer is a gynecological malignancy characterized by a dismal outcome for its tendency to metastasize despite aggressive systemic therapies, commonly carboplatin and paclitaxel. Among recurrent ovarian cancer, patients with oligometastatic disease are supposed to have a better prognosis since they could benefit from local approaches besides chemotherapy, considering also the limited alternative regimens of systemic therapy. The aim of our study is to evaluate the role of stereotactic body radiotherapy (SBRT) in terms of LC and toxicity in a setting of patients with oligometastatic recurrent ovarian cancer.

Material and Methods: Between January 2011 and February 2015, 15 patients (20 lesions) with recurrent oligometastatic ovarian carcinoma of any histology underwent SBRT. Toxicity and tumor response was scored using Radiation Therapy Oncology Group/European Organization for Research and Treatment of Cancer Scale. Tumor response was evaluated by CT/ PET, according to Response Evaluation Criteria in Solid Tumors.

Results: Median age at treatment was 60 years and median follow-up was 21 months. The sites of disease were abdomino-pelvic lymphnodes (13 lesions), liver metastasis (4 lesions), lung metastasis (2 lesions) and para-vaginal mass (1 lesion). The SBRT doses were prescribed based on dimensions of target volumes and organs at risk constraints as follow: for lymphnodal lesions the dose prescription was 36-45 Gy in 6 fractions and only one case treated with 40 Gy in 4 fr; for hepatic lesions 61.89 -75 Gy in 3 fractions, for the pulmonary lesions both cases received 48 Gy in 4 fractions meanwhile in the para vaginal recurrence dose prescription was 36 Gy in 6 fractions. None of the patients had grade 3 /4 acute or late Gu or Gi toxicity. At a median follow-up of 21 months local control was observed in 85%. Complete radiologic response, partial response and progressive disease were observed in 12 (60%), 5 (25%) and respectively 3 cases (15%).

Conclusion: SBRT is a feasible and well tolerated treatment approach in oligo-metastatic ovarian patients, offering a good local control. Certainly, additional patients and longer follow-up are necessary to confirm the impact of local treatment as SBRT in ovarian cancer therapy.

PO-0729

Hematological toxicity of Rth-Chth for cervical cancer: Rth technique and dose given to bone marrow

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Purpose or Objective: This is a concern about hematological toxicity (HT) of intensity-modulated radiation therapy (IMRT) technique combined with chemotherapy used in the treatment of gynecological malignancies due to the high volume of low radiotherapy doses given to bone marrow. We aimed to determine if pelvic IMRT increased HT and which dosimetric parameters were predictors of this toxicity.

Material and Methods: Ninety-nine consecutive cervical cancer patients treated with radio-chemotherapy (45-50,4Gy with Cisplatin 40mg/m2/week) between IX2011 and V2015

were included. Fifty patients received three-dimensional conformal radiotherapy (3D-CRT) (4-6 fields) and 49 IMRT with RapidArc. Target volumes were contoured in accordance with RTOG Atlas guidelines. Pelvic bone marrow was defined using a computed tomography density-based autocontouring algorithm. HT was graded by Common Terminology Criteria for Adverse Events, version 4.0 criteria weekly during treatment. The rate of occurrence of grade III-IV HT (overall, anemia, thrombocytopenia, neutropenia, leucopenia) were evaluated in relation with radiotherapy technique, PTV, age, mean dose to bone marrow, volumes of bone marrow receiving 5, 10, 20, 30, and 40 Gy (V5, V10, V20, V30, and V40). The Chi2 test was used to compare HT for each studied parameter dichotomized at the median. Differences between IMRT and 3D-CRT technique were compared with U-Mann-Whitney test.

Results: Patients treated with IMRT had significantly lower V20, V30, V40, mean bone marrow dose, and PTV volume than 3D-CRT patients ($p < .00001$ for each). The both techniques did not differ significantly in age of patients, number of chemotherapy cycles given, V5 and V10. Grade III-IV HT of any kind occurred in 52% of 3D-CRT patients and 30% of IMRT patients, $p = 0.03$. Each evaluated threshold of dose given to bone marrow predicted significantly occurrence of HT. Larger PTV was not predictor of higher HT.

Conclusion: Pelvic IMRT decreased HT of radio-chemotherapy for cervical cancer in comparison with 3D-CRT by reduction of volume of doses >20 Gy given to bone marrow. Even though a precise dose threshold for bone marrow was not determined, limitation of bone marrow volume defined automatically as bone in patients treated with radio-chemotherapy is warranted.

PO-0730

QOL after postoperative IMRT for cervical cancer: results from matched pair analysis with 3DCRT

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Purpose or Objective: Adjuvant intensity modulated radiotherapy (IMRT) for cervical cancer is associated with reduced late gastrointestinal toxicity (GI) however its impact on quality of life (QOL) is not known. The present matched pair analysis was performed to compare QOL between three-dimensional conformal radiation (3DCRT) and IMRT.

Material and Methods: From Jan,2011- Dec,2013 patients undergoing adjuvant or salvage radiation with 3DCRT or IMRT (with or without concurrent chemotherapy) and vaginal brachytherapy were included. Those who received systemic chemotherapy or extended field radiation were excluded. The study inclusion criteria also necessitated at least 1 year of follow up with QOL assessment at at least 2 time points. At follow up toxicity was documented using CTCAE version 3.0 and QOL was measured with EORTC QLQC-30 and Cx-24 module. The baseline characteristics of two cohorts were compared using chi-square test. Raw scores were converted into final scores using EORTC recommended conversion and linear mixed model was used to evaluate impact of time trends and treatment technique on QOL. A 10-point difference in QOL score and $p < 0.05$ was considered relevant and statistically significant. All data were analyzed using SPSS, version 20.0 and Graph pad Instat.

Results: A total of 64 patients were eligible. Postoperative IMRT and 3DCRT was used in 40 and 24 patients respectively. The baseline socioeconomic, disease and treatment related characteristics were well balanced in both groups rendering cohorts eligible for a matched pair analysis. At one year there was recovery in most of the QOL domains in both cohorts with objective scores reaching baseline levels. The