

treatment time and simple radioprotection measures should position this new medical device as an interesting alternative for breast IORT.



#### OC-0480

##### External radiation therapy, extended surgery and intraoperative electrons for oligorecurrent pelvic cancer

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**Purpose/Objective:** To analyze prognostic factors associated with survival in patients after intensified radio-surgical rescue of oligorecurrent pelvic cancer, particularly the influence of external beam radiation therapy (EBRT).

**Materials and Methods:** From January 1995 to december 2011, 81 patients [colorectal (46%); gynecologic (26%); retroperitoneal sarcoma (18%)] underwent extended surgery [multiorgan (58%), bone (23%), vascular (9%), soft tissue (43%)] and intraoperative electron-beam radiation therapy [IOERT (10-15 Gy)] to the pelvic recurrence tumor bed. 35 (43%) of these patients also received EBRT (30.6-50.4 Gy). Survival outcomes were estimated using the Kaplan-Meier method, and risk factors were identified by univariate and multivariate analyses.

**Results:** Median follow-up was 34 months (3-189 months), and the 1-3-, and 5-year rates of locoregional control (LRC) were 83%, 53%, and 41%, respectively. Univariate Cox proportional hazard analysis revealed worse LRC for those patients who did not received integrated EBRT treatment for the pelvic recurrence rescue (p=0.003), and had non-radical resection (p=0.01). On multivariate analysis, integrated EBRT treatment, non-radical resection, and tumor fragmentation retained significance (p=0.002, p=0.004, and p=0.05, respectively).

**Conclusions:** EBRT treatment integrated for rescue, radical resection, and absence of tumor fragmentation are associated with improved LRC in patients with oligorecurrent pelvic cancer. Present results suggest that patients with oligorecurrent pelvic disease may benefit from EBRT treatment integrated with extended surgery and IOERT.

#### OC-0481

##### External-beam radiation therapy, surgery and intraoperative electrons for locally recurrent rectal cancer

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**Purpose/Objective:** To analyze prognostic factors associated with survival in patients after intraoperative electrons containing resective surgical rescue of locally recurrent rectal cancer (LRR), particularly the influence of an integrated component of external beam radiation therapy (EBRT).

**Materials and Methods:** From January 1995 to december 2011, 60 patients with pelvic recurrence from rectal initial cancer primaries underwent extended surgery [n=38; multiorgan(43%), bone (28%), soft tissue (38%)] or non-extended (n=22) surgical resection, including a component of intraoperative electron-beam radiation therapy (IOERT) to the pelvic recurrence tumor bed. Twenty-eight (47%) of these patients were amenable and also received EBRT (range, 30.6-50.4 Gy). Survival outcomes were estimated using the Kaplan-Meier method, and risk factors were identified by univariate and multivariate analyses.

**Results:** Median follow-up was 36 months (range, 2-189), the 1-3-, and 5-year rates of LRC were 86%, 52%, and 44%, respectively. On univariate analysis, patients with R1 resection (5-year LRC=55.7% vs. 19.0%, p=0.02) and not receiving EBRT (5-year LRC= 56.2% vs. 32.0%, p=0.02) were at a significantly higher risk of LR recurrence. Patients without tumor fragmentation, non-metastatic lymph nodes, absence of perineural invasion and age > 55 had a lower risk of LR relapse. We observed on multivariate analysis that margin status (R1resection), EBRT at the time of pelvic recurrence, no tumor fragmentation and non-lymph node metastasis retained significance with regard to LR relapse.

**Conclusions:** EBRT treatment integrated for rescue, resection radicality, and not involved fragmented resection specimens are associated with improved LRC in patients with locally recurrent rectal cancer. Additionally tumor fragmentation could be compensated by EBRT. Present results suggest that a significant group of patients with oligorecurrent pelvic disease may benefit from EBRT treatment integrated with extended surgery and IOERT.

#### OC-0482

##### Intraoperative electron boost compensates adverse prognostic factors for pelvic recurrences in rectal cancer

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**Purpose/Objective:** Patients with locally advanced rectal cancer are reported to have a dismal prognosis, challenging expert interdisciplinary management. The purpose of this study is to analyze the 15-years results of neoadjuvant-based multimodality treatment for locally advanced rectal cancer (LARC) with particular emphasis on intraoperative electron-beam radiotherapy (IOERT).

**Materials and Methods:** A total of 335 patients with LARC [≥cT3 93% and/or cN+ 69%] who underwent multimodality treatment between 1995 and 2011 were studied. The basic treatment principle was preoperative(chemo)radiotherapy, intended radical surgery, IOERT and elective adjuvant chemotherapy (aCT). In uni- and multivariate analyses, risk factors for all loco-regional recurrence (LR), IOERT in-field recurrence (IFR) and IOERT out-field recurrence (OFR) were studied.

**Results:** Median follow-up for all patients was 52.2 months (range, 1-184), the 5 year overall survival, disease-free survival, local control, in-field and out-field control rates were 73.6%, 69.4%, 94.4%, 97.0% and 93.4%, respectively. Synchronic local and distant metastatic disease was present in 16% of the patients that recurred. In multivariate analysis distal margin distance < 20 mm [HR 3.74 (1.79-7.82), p < 0.001], ypN+ [HR 2.53 (1.16-5.54), p = 0.02] and tumor histology grade 3 [HR 7.0 (2.8-17.56), p < 0.001]; Non-sphincter preserving surgery [HR 6.49(1.58-26.32), p=0.009], cT4 [HR 6.24 (1.34-29.1)], ypN+ [HR 7.41 (1.96-28.0)] and tumor histology grade 3 [HR 8.5 (2.8-.27.44), p < 0.001]; gender [HR 2.87 (1.10-7.46), p = 0.03], distal margin distance < 20 mm [HR 4.37 (1.68-11.34), p = 0.002] and no aCT [HR 2.62(1.03-1.68), p = 0.04] were associated with increased risk of LR, IFR and OFR, respectively.

**Conclusions:** Overall oncological results after multimodality treatment of LARC are promising. The positive impact of intraoperative radiotherapy on pelvic control does justify the inclusion of this therapeutic modality in prospective multi-institutional trials. Cancer death with uncontrolled pelvic progression was 28%. Adding aCT to the treatment may contribute to improve LR rates.

#### OC-0483

##### ISORT-Europe Data Registry: main characteristics of IORT treatments

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