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POSTER

The pattern of care study for radiotherapy of carcinoma of the uterine cervix in Japan

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Purpose: To establish the clinical quality assurance (QA) of radiotherapy for patients with carcinoma of the uterine cervix through the Patterns of Care Study (PCS) in Japan.

Methods and patients: From 1998 through 2000, PCS audits for 5 disease sites were performed for 91 institutions nationwide. Data of 1,069 patients with carcinoma of the uterine cervix were obtained from 73 institutions. The national average (NA) of the process of radiation therapy in non-surgery group (n=594) was calculated.

Results: Average age was 68. NA of patients in Stage III or IVa was 58%, of brachytherapy utilization was 70%. A high dose rate machine was used for 55%. Actuarial 3-year survivals were 88% in Stage I, 85% in II, 68% in III, and 23% in IV. The corresponding rates were 69% for the younger group (<64 y/o), 79% for the middle age (65-74 y/o) and 64% for elderly (75 y/o-). The corresponding rate for the patients treated with brachytherapy was 77% and for those without was 48%.

Conclusions: We could determine NAs for the various factors involved the process and outcome of radiotherapy for the patients with carcinoma of the uterine cervix. These findings should be useful as a QA measure.

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Detection of mutant p53 protein in the serum of patients (pts) with cervical carcinoma: correlation with the level of serum epidermal growth factor receptor (EGFR)

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Purpose: Mutation of p53 tumor suppressor gene is a common genetic abnormality in a variety of malignancies. In cervical carcinoma, overexpression of mutant p53 protein in tumor tissue has been reported in 20-60% of cases. Recently, enzyme-linked immunosorbent assay (ELISA) allows quantitative determination of various oncoproteins in the serum of cancer patients. We have previously reported that the serum level of EGFR was significantly elevated in 38 cervical carcinoma pts compared to controls and was associated with disease progression (Clin Cancer Res 6:4760, 2000).

Methods: The levels of mutant p53 protein were determined in serum of the same cohort (invasive or recurrent carcinoma: 26, carcinoma in situ [CIS]: 12) and 18 healthy female controls using ELISA (Calbiochem, Cambridge, MA, USA).

Results: The median serum level for mutant p53 in cervical carcinoma pts (0.11 ng/ml; range, 0-2.66 ng/ml) demonstrated no significant difference compared with that of controls (0.14 ng/ml; range, 0-0.34 ng/ml) (p=0.324). There was also no significant difference in the median serum level of mutant p53 between CIS and invasive or recurrent carcinoma (p=0.813). Serum mutant p53 showed positive elevation in 5 pts (19%) with invasive or recurrent carcinoma and 1 pt (8%) with CIS, using the cutoff value of 0.20 ng/ml. A significant positive correlation was found between serum EGFR and mutant p53 protein levels (r=0.668; p<0.0001).

Conclusion: Although mutant p53 level demonstrated no significant difference compared to controls in cervical carcinoma pts, it was elevated in a proportion pts and correlated with the level of serum EGFR.

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Treatment of carcinoma cervix using 9 Gy per fraction in high dose rate brachytherapy - Results and Morbidity

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Purpose: Use of high dose rate brachytherapy (HDRBT) has steadily increased due to its physical and technical advantages. Though it has been used for a long time, there is still no consensus on the ideal dose per fraction. There is a suggestion that dose more than 7 Gy per fraction

increases morbidity. Present study has been undertaken to evaluate the rectal and bladder morbidity when a dose of 9 Gy per fraction is used.

Materials and Method: A retrospective analysis of 115 patients treated by radiotherapy from July 96 to December 99 was done. Patients were staged according to FIGO staging system (5-Ib, 14-IIa, 35-IIb, 14-IIla, 43-IIlb, 2-IVa, 2-IVb). Median age of presentation was 55 years. Histopathologically 112 were squamous cell carcinoma and 3 adenocarcinoma. Patients were treated by external beam radiotherapy to whole pelvis (45-50 Gy in 4-5 weeks). 12% also received chemotherapy (neoadjuvant/concurrent). HDRBT application was done after 12-15 days. Two applications were done with a dose of 9 Gy per fraction to point A (total dose 18 Gy) at an interval of one week. Insertions were individualised according to the applicator geometry.

Results: 2 year disease free survival in stage I was 80%, stage II-57%, stage III-59.6%, and stage IV-25%. The overall median disease free survival was 26 months and overall median survival was 28 months. Total rectal and bladder morbidity was seen in 26.3% patients at the time of analysis. Rectal morbidity alone was seen in 18.2% patients (grade 1-6%, gr 2-11.3%, gr 3-0.8%, gr 4-0%). Grade 1/2 bladder morbidity was seen in 7.8% patients and 2.6% patients developed grade 3 small bowel morbidity. We also analysed the average dose received by rectum and bladder. 41.2% of patients had received rectal dose less than 50%, 49% patients received dose between 50-70%, and 9.8% received dose more than 70%. Average bladder dose (3 points on the bulb of foley's catheter with 7 ml contrast) was less than 100% in most patients, only 15.7% received doses greater than 100%. The biological dose data (BED) was calculated assuming alpha/beta=3 Gy and recovery half life of the order of 2.5 hours. Our dose schedule is resulting in late BED's similar to that of manchester equivalent low dose rate schedule.

Conclusion: Carcinoma cervix can be effectively treated with HDRBT using a dose per fraction of 9 Gy. This fractionation schedule is helpful in a busy department and reduces the visits of the patient to the hospital.

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Time of radiotherapy as the prognostic factor for the women treated because of endometrial cancer

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Endometrial cancer is the most common gynaecological cancer. Multiple prognostic factors for endometrial cancer such as age, stage, grade, depth of myometrial invasion, histologic type, lymph nodes involvement, peritoneal cytology are known.

Purpose: To evaluate the influence of overall treatment time, radiotherapy time and surgery-to-radiation interval on relapses and overall survival of patients treated because of endometrial cancer.

Material: A retrospective review was conducted on 150 women with endometrial cancer treated between 1990-1995 in Great Poland Cancer Centre. Patients were treated with primary surgery and adjuvant radiotherapy (intravaginal brachytherapy and teletherapy). An analysis concerns surgery-to-radiotherapy time-shorter or longer than 60 days, radiotherapy time-shorter or longer than 40 days, overall treatment time (teletherapy and brachytherapy and interval between its)-shorter or longer than 60 days, and its influence on rate of recurrence and 5 year survival.

Results: The first parameter was surgery-to-radiotherapy time. 57% of operated women waited for the adjuvant radiotherapy 60 day (group 1), 43% longer (group 2). Local recurrences were observed in 7% women of group 1 and 0% of group 2. Metastases were observed in 7% and 6% of women. The 5 year survival rate was 85% for the first group and 90% for the second one.

The next analysed parameter was radiotherapy time. 76% of patients were irradiated shorter than 40 day (1), in 24% of them the radiotherapy time was longer (2). Local recurrences were observed in 8% for group 1 and 22% for group 2. The distant metastases rates were 5% and 17% for 1 and 2 respectively. The 5 year survival rates was 86% for the first group and 65% for the second one.

The third of analysed parameter was overall treatment time. 55% of women completed adjuvant radiotherapy in the shorter time than 60 days (group 1), for 45% this time was longer (group 2).

Local recurrences were observed in 9% women of group 1 and 15% of group 2. Distant metastases were seen in 7% and 9% respectively. The 5 year survival rate was 86% for the first group and 74% for the second one.

Conclusion: Prolongation of the waiting time to adjuvant treatment over 60 days was not associated with an increase of recurrence rate and 5 year mortality. Prolongation of both radiotherapy time and an overall treatment time was associated with an increased recurrence rate, metastases rate and mortality rates.