

Fig. 1

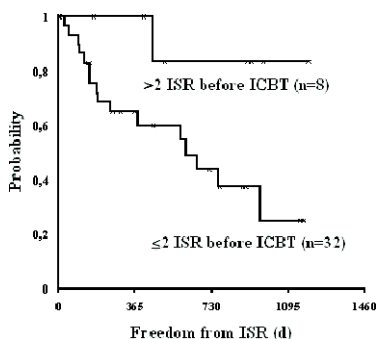


Fig. 2

Conclusion: ICBT is highly effective and save in patients with ISR. Our results are in accordance to the WRIST and BETA-WRIST data that showed an ISR-free-survival-rate of 86% after 1/2 year (WRIST) and 66% (BETA-WRIST). The ISR-rates in our control group (70%) were comparable to the placebo-groups in WRIST (68%) and BETA-WRIST (72%). However, in our study the follow up was longer than in the randomised trials. After 3 years only 38% of the patients were without IRS. Surprisingly, patients with > 2 ISR before ICBT had the lowest ISR-rate after ICBT.

1377

POSTER

Movement of the cervix in after-loading brachytherapy: implications for designing external beam radiotherapy boost fields

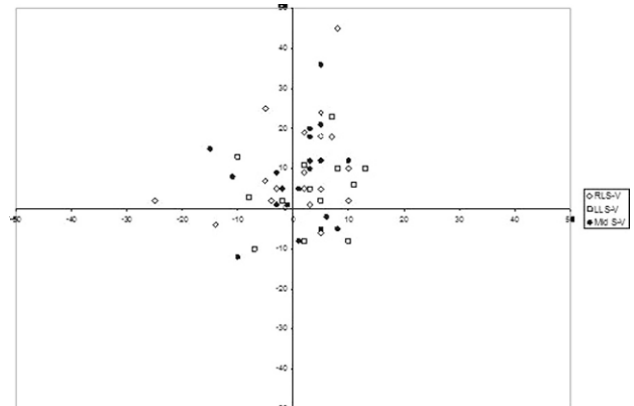
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Background: Patients with invasive carcinoma cervix treated by chemoradiotherapy and brachytherapy may also receive pelvic side wall boost using a midline shield (MLS). The purpose of this study is to assess the usefulness of implanted gold grains in detecting the movement of the cervix caused by the insertion of low dose rate brachytherapy applicators and its implication in designing MLS.

Materials and methods: The medical records of 42 patients with various stages of cervical carcinoma, who were treated by radical chemoradiotherapy from August 1999 to December 2003, were reviewed. All of these patients underwent examination under general anaesthesia and gold grain insertion to demarcate the vaginal tumour extent, in the anteroposterior and lateral planes, prior to the start of external beam RT. The isocentric orthogonal films (simulator films) of external RT and brachytherapy were compared to assess the change in position of the gold grains and the consequences for the design of the MLS for parametrial and pelvic side wall boost.

Results: A significant shift in the position of the gold grains was noted in both the x (lateral) and the y (cranial/caudal) axes, ranging from 1 mm to 46 mm. The median shift of midline, right and left lateral gold grains was 4.5, 5 and 7 mm in the x-axis while it was 10, 8, and 9.5 mm in the y-axis. The majority of gold grains were shifted both cranially (80%) and laterally (69%). Thirty two patients received parametrial boost RT of which 25 (59.3%) patients had a customised, pear-shaped shield and the remaining 7 (16.6%) had a straight sided, rectangular MLS. Four patients relapsed locally and 3 of these had been treated using a customised shield. In 2 of these 4 patients, there was an absolute under-dosage of the central

pelvis at the tip of the intra-uterine tube, by 50% of the parametrial boost dose (5.4 Gy/3#/3days).



Scatter diagram showing the shift of gold grains in both the x and y-axes. Lateral shift in the x-axis and cranial shift in the y-axis are given positive signs. (RLS-V: Right lateral, LLS-V: Left lateral, Mid S-V: Midline gold grains)

Conclusions: The after loading brachytherapy in the management of carcinoma cervix results in significant shift of cervix and under-dosage of the central pelvis while delivering parametrial boost radiotherapy. Although this did not result in a statistically significant local relapse rate, the resulting under-dosage can be avoided by designing customised MLS taking account of the shift in the gold grain markers and potentially improving local control of disease.

1378

POSTER

Dosimetric correlations with radiation esophagitis in intrathoracic malignancy

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Background: Acute radiation esophagitis was assessed according to clinical and dosimetric parameters in patients treated with thoracic radiotherapy (TRT).

Material and methods: Subjects comprised 61 patients who received TRT for lung cancer (n=43, 70%) or mediastinal malignancies (n=18, 30%) between February 2000 and April 2005. Median age of patients was 68 years (range, 26–88 years). Underlying pathology was non-small-cell lung cancer (n=34, 55%), small-cell lung cancer (n=9, 15%), thymoma (n=4, 7%), thymic cancer (n=7, 11%), malignant lymphoma (n=2, 3%), mediastinal seminoma (n=1, 2%), mediastinal liposarcoma (n=1, 2%), or other mediastinal malignancy (n=3, 5%). A median dose of 60 Gy (range, 40–66.6 Gy) was administered to the isocenter in single daily fractions of 1.8 or 2 Gy. With heterogeneity corrections, median dose administered to the isocenter was 60.0 Gy (range, 39.7–68.2 Gy). A total of 41 patients (67%) were treated with concurrent chemoradiotherapy comprising platinum agent (cisplatin or carboplatin) combined with: paclitaxel (n=24, 39%); irinotecan hydrochloride (n=7, 11%); vincristine sulfate and etoposide (n=2, 3%); vinorelbine ditartrate (n=1, 2%); etoposide (n=4, 6%); doxorubicin hydrochloride, cyclophosphamide and etoposide (n=1, 2%); vindesine sulfate and mitomycin C (n=1, 2%); or docetaxel (n=1, 2%). Esophageal toxicities were graded according to Radiation Therapy Oncology Group criteria. The following factors were analyzed with respect to associations with Grade 1 or worse esophagitis using univariate and multivariate analyses: age; gender; concurrent chemotherapy; chemotherapeutic agents; overall duration of TRT; maximal esophageal dose; mean esophageal dose (D mean); and percentage of esophageal volume receiving >10 Gy (V10) to >65 Gy (V65) in 5 Gy increments.

Results: A total of 43 patients (70%) developed acute esophagitis: Grade 1, n=36 (59%); or Grade 2, n=7 (11%). No patients displayed acute esophageal toxicity of Grade 3 or worse. Univariate analysis revealed significant associations with esophagitis for D mean (p=0.007), V10-V55 (p<0.05) and chemotherapeutic agents (p=0.015). The most significant correlation was between esophagitis and V35 on univariate (p=0.001) and multivariate analyses (p=0.020).

Conclusions: V35 was the most significant factor associated with mild acute esophagitis.