Title: Primary Radiation Treatment (RT) in 436 patients with carcinoma of the uterine cervix (CU): Analysis of prognostic factors.

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Purpose: To select patients with poor prognostic factors who eventually could be candidates for entering in prospective studies using multimodality treatment. To evaluate complications.

Methods: From 1970 to 1993, 436 out of 1163 consecutive patients with CU were treated with RT alone. A Cox regression analysis of factors influencing the overall survival (OS) and pelvic control (PC) was performed: a) host/tumor related: age, FIGO stage, pathology, differentiation grade, vascular invasion, presence of lymphovascular invasion (LVI), anterior/posterior position, lymph node status, submucous level, comorbidity; b) treatment related factors: energy, radiation technique, doses, boost to lateral pelvic, field edges, central blocking, brachytherapy doses (c), other factors: period, tumor response within 3 months.

Results: Significant detrimental factors for OS: higher FIGO stages, adenocarcinoma pathology, age less than 50 years, absence of lymphovascular invasion (LVI). Detrimental factors for PC were: higher FIGO stages, absence of lymphovascular invasion (LVI), impact of LVI, tumor types (adenocarcinoma vs. squamous cell carcinoma), age less than 50 years, and distant metastasis. The impact of the percentage of patients with LVI was significant for both OS and PC. The actuarial 5-year survival was 72% for patients without LVI and 35% for patients with LVI. The 5-year pelvic control was 83% for patients without LVI and 70% for patients with LVI.

Conclusions: The results of this study suggest that patients with CU who have a high risk of recurrence should be considered for multimodal therapy, including chemotherapy and brachytherapy.

Title: HYPERFRACTIONATED ACCELERATED RADIOTHERAPY (HART) IMMEDIATELY FOLLOWED BY SURGERY IN LOCALLY ADVANCED RECTAL CANCER (LARC).

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Purpose: To evaluate the acute and chronic toxicity of a new radiotherapy regimen consisting of hyperfractionated accelerated radiotherapy (HART) followed by surgery in patients with locally advanced rectal cancer.

Methods: Eligible patients were males and females aged 18-75 years with pathologically confirmed locally advanced rectal cancer. Patients were randomized to receive either HART followed by surgery or standard radiotherapy followed by surgery. The HART regimen consisted of 24 fractions of 2 Gy/day given over 5 days, followed by a 2-week break, and then 12 fractions of 2 Gy/day given over 5 days. Radiotherapy was delivered using a linear accelerator with a 6-MV X-ray beam. The surgery was performed within 5-7 days after the completion of radiotherapy. The overall survival (OS) and disease-free survival (DFS) were the primary endpoints.

Results: A total of 54 patients were included in the study, with 27 patients in each group. The median age was 62 years (range 38-75). The majority of patients had T3 or T4 tumors (81%). The median follow-up time was 36 months. The 3-year OS was 52% in the HART group and 48% in the standard radiotherapy group (p = 0.52). The median DFS was 24 months in the HART group and 18 months in the standard radiotherapy group (p = 0.28). The acute toxicity was low, with grade 3 or 4 toxicity occurring in 15% of patients in the HART group and 23% in the standard radiotherapy group. The late toxicity was also low, with grade 3 or 4 toxicity occurring in 10% of patients in the HART group and 12% in the standard radiotherapy group.

Conclusions: The HART regimen followed by surgery is an effective and well-tolerated treatment for locally advanced rectal cancer. The 3-year OS and DFS are comparable to those achieved with standard radiotherapy followed by surgery. The low rate of acute and late toxicity is a significant advantage of this regimen.