Five patients (3 with cCR and 2 with cPR, all stage IIb) underwent hysterosalpigophorectomy after the end of the treatment. The three cCR and the two cPR have been confirmed histologically. Six out of 21 patients presented toxicity Grade 3-4: mucositis (3), haematologic toxicity (2) and dermatitis (1). No toxic death has been noted.

Conclusion: The combination of standard fractionated RT with concurrent administration of CPT-11, IFNa2b and amifostine is a highly active and well tolerated treatment for LACC.

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A pilot phase II study of cisplatin and capecitabine in patients with recurrent cervical carcinoma

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Background Platinum is the mainstay of treatment in advanced or recurrent cervical carcinoma, however, the duration of response is short lived as well as the median survival. Fluorouracil (5-FU) has been shown to be active in cervical carcinoma. Capecitabine, an oral fluoropyrimidine carbamate, is sequentially converted to 5-FU by thymidine phosphorylase (TP) which is found at higher concentrations in cervical carcinoma than normal tissue. In addition, cisplatin further upregulates TP. Capecitabine plus cisplatin has the potential to be an active treatment, which is more convenient than 5-FU-cisplatin.

Materials and methods This study combines capecitabine and platinum in patients with recurrent cervical carcinoma with no potentially curative standard treatments. Fourteen patients (12 squamous cell carcinoma, and 2 adenocarcinoma) with a median disease-free interval of 11 months (range 2-96) received cisplatin 50 mg/m^2 intravenously on day 1 and oral capecitabine 1000 mg/m^2 twice daily for two weeks with a one week rest period.

Results Median age was 54 years (range, 33-74). A total of 77 cycles were administered with a mean of 5.5 cycles (range, 3-6) per patient. Four of the fourteen patients had complete response (28%), 4 had partial response (28%), and 3 had disease stabilization (21%). The median follow-up time was 15 months (range, 6-48) and median time to progression was 14 months. There were grades III to IV neutropenia, palmar-plantar erythrodysesthesia (PPE), and mucositis in 13%, 4%, 3% of the cycles, respectively.

Conclusion This active yet convenient combination of capecitabine and cisplatin shows a high response rate, long time to progression and acceptable toxicities. Further clinical exploration of the present combination appears warranted.

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The clinical implications of radiotherapy on renal function in patients with hydronephrosis in stage IIIB cancer of the cervix

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Background: Acute urinary obstruction is a life-threatening complication in this group and often produces a break in radiation treatment, which adversely affects outcome. The ability to predict which patients are more likely to require ureteral stenting would allow the clinician to arrange elective stenting prior to radiation treatment, thus avoiding a break in treatment.

Materials and Methods: Renal imaging, renal function and creatinine clearance were analysed for all stage IIIB patients undergoing radical chemo/radiotherapy at our institution from Jan 2000 to Jan 2002. Co-morbid conditions and intercurrent medications likely to adversely affect renal function were noted. Details of stenting procedures were obtained.

Results: Risk factors associated with ureteral stenting in Stage IIIB cervical cancer were; a) medication, 10% gentamicin usage, 70% NSAID usage, b) comorbid conditions, urinary tract infection 30%, hypertension 10%, smoker 90%. 27% did not require urinary diversion and all of these had mild unilateral hydronephrosis. 18% of patients had stents placed at presentation (prior to radiotherapy) and of these 67% had bilateral hydronephrosis. 37% of patients required stenting during radiotherapy and all had severe bilateral hydronephrosis. This meant a break in radiation treatment of, on average one week. 18% required urinary diversion after radiotherapy. The average creatinine clearance was 70mls/min in the unilateral hydronephrosis group and 45mls/min in the bilateral hydronephrosis group. In those with no urinary diversion the average creatinine clearance was 80mls/min, in those stented at presentation 62mls/min and those requiring urinary diversion during radiotherapy had the lowest average creatinine clearance at 28 mls/min.

Conclusions: Patients with Stage IIIB cancer of the cervix with bilateral hydronephrosis are more likely to have a low creatinine clearance. There is a trend for those with moderate to severe bilateral hydronephrosis at presentation and a low creatinine clearance to be much more likely to require urinary diversion during radiotherapy. The 37% of patients requiring urinary diversion during radiation had a break in treatment of on average one week. These patients have a combination of bilateral hydronephrosis and low creatinine clearance and should be considered for elective urinary diversion prior to radiation treatment.

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Intensity modulated arc therapy and carboplatin/paclitaxel chemotherapy for treatment of high-risk endometrial malignancies

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Background: Whole pelvic IMRT is complex, requiring multiple fields, often with field splitting and junction problems. We developed an Intensity Modulated Arc Therapy (IMAT) radiation technique that simplifies treatment planning and delivery.

Materials and Methods: Five women with high-risk carcinoma of the endometrium received 4-6 cycles of paclitaxel and carboplatin sequentially with radiotherapy. Using axial CT slices, the tumor bed, iliac and pre-sacral vessels, ± lower para-aortic region were contoured as GTV. A CTV with 5-10 mm margin and PTV with 7 mm margin were generated. The small bowel, iliac crests, femoral heads, bladder and rectum were contoured as critical organs. Balancing the complexity of the arc technique with normal organ sparing, two anterior intensity modulated arcs, from 300° to 30° (IEC convention) and 330° to 60° were used. DVH, dose distribution, dynamic MLC patterns, and comparisons to conventional treatment and 5-field IMRT inverse plans were generated.

Results: Using the IMAT, 95% of the tumor volume received dose above 45 Gy, the nodes 40-45 Gy and bladder/ rectum $\leq$ 45Gy. This technique allowed sparing of the small bowel, iliac crests and femoral heads. The dose to the iliac crests was reduced compared to conventional radiation therapy and similar to IMRT. The volume of small bowel receiving dose above 45Gy was 80%, 10%, 15% for conventional, IMRT, and IMAT technique respectively. Treatment has been well tolerated with no significant acute toxicities.

Conclusions: IMAT provides an effective technique to treat the tumor bed and regional nodes while allowing a conformal avoidance of the bone marrow and small bowel compared with conventional radiation therapy. While critical structure sparing is similar to multi-field IMRT, our method is simpler to plan and deliver and was well tolerated. Ongoing work will assess both the clinical outcome and long term toxicity of this multi-modality treatment strategy.

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Improved dose distribution for complex radiotherapy of cervical cancer using an innovative brachytherapy technique.

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Purpose: The aim of this paper is to introduce a technique for cervical, MR based 3D planned high dose rate brachytherapy resulting in improved dose distribution in the GTV as compared to that obtained with commercially available standard cervical applicators.

Materials and methods: Between January 2002 and January 2003, 16 patients received external beam- and brachytherapy as treatment for cervical cancer. In addition to the CT based shrinking volume conformal teletherapy, to avoid excessive doses to the healthy structures during complex cervical radiotherapy a special adjustable applicator was used for the brachytherapy. The applicator is suitable for situating the radioactive source in the axis of the treated uterus. Isodose curves were calculated upon the information of the MR image with the catheter at the treatment site