by histologic type was the following: Leiomyosarcoma (LMS)—33 patients (50.8%); mullerian mixed mesodermal tumor (MMM)—14 patients (21.5%); endometrial sarcoma (ES)—16 patients (24.6%) and other histologies—2 patients (3.1%). Overall survival at 2 and 5 years was 74% and 58%, respectively. Age at presentation, initial symptoms, parity and associated medical conditions were recorded. Overall survival (OS) and disease-free survival (DFS) were analysed by histologic type, hormonal status, tumor extension and treatment. Tumor extension and hormonal status were the most important factors in predicting survival ($P < 0.01$). No significant difference for prognosis was found for histologic type and medical associated conditions. All patients were treated with surgery (S), radiation therapy (RT), chemotherapy (CT) and hormonal therapy (HT), alone or combined. T1 e T2 patients which underwent postoperative RT did significantly better than those treated with S alone (77% vs 35% 5-year DFS; $p < 0.007$). The best results were obtained in the subgroup of patients treated with S + RT + CT ((81% 5-year DFS). There was a significantly lower rate of pelvic recurrence among the women treated with RT ($P = 0.01$) and a slight tendency to a lower rate of distant failures among those treated with CT ($P = 0.07$).

1177 POSTER

PROGNOSTIC VALUE OF HISTOLOGICAL TUMOR REGRESSION AFTER IRRADIATION FOR UTERINE CERVIX CARCINOMA

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Radio-surgical combination is an effective treatment for centro pelvic cervix carcinoma. Using preoperative radiotherapy, 80% of the patients have no residual disease at the time of surgery. The purpose of this study was to determine the prognostic value of the cervix sterilization after initial irradiation.

Patients and methods: Between 1976 and 1993, 200 patients with histologically proven cervix carcinoma (91 patients with clinical stage Ib tumor, 91 with stage IIA, and 18 with stage IIB) have been treated by irradiation followed by radical hysterectomy 6 weeks later. The mean age was 48 years. Median follow up was 86 months. One hundred and five patients underwent an utero-vaginal application of caesium 137. A dose of 60 Gy was delivered in the reference volume followed by radical hysterectomy and lymphadenectomy. Ninety five patients with bulky centro pelvic tumors received an external pelvic irradiation, a brachytherapy and surgery. The mean dose to whole pelvis was 40 Gy (18–50).

Results: Uncorrected five-year overall survival rate was 96% for stage Ib, 61% for stage IIA and 48% for stage IIB.

Sterilization rate after irradiation was 82% for stage Ib, and 61% for stage IIA or IIB. Probability of survival was significantly better in case of tumor sterilization with a 5-year survival rate of 78% versus 65% and 61% for patients with microscopic residual disease and macroscopic persistent tumors, respectively. In univariate analysis, stage and node status according to the lymphography were prognostic factors. A multivariate analysis should be presented.

Conclusion: histological sterilization after irradiation appeared as a favorable prognostic factor.

1178 POSTER

A PHASE II STUDY OF CPT 11 (IRINOTECAN) IN CHEMOTHERAPY NAIVE PATIENTS WITH ADVANCED CANCER OF THE CERVIX UTERI (C.C.U.)

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Patients with advanced C.C.U. without prior therapy have been treated with the new DNA topoisomerase I inhibitor CPT 11 350 mg/m^2 q 3 w. Patients were stratified depending on whether all the target lesions were within a field of prior radiation therapy (group B) or not (group A).

Criteria of Inclusion: Age $\leqslant$ 75; WHO PS 0–2; ANC $> 2 \times 10^9$ platelets $> 100 \times 10^9$, creatinine $\leqslant$ 130 μml/l, bilirubin $\leqslant$ 1.25 N, Transaminases $\leqslant$ 2 N (except in case of liver metastases), presence of at least one measurable lesion.

Characteristics: 42 patients have been enrolled to date (median age 48 (30–71); median number of involved organs: 1(1–3) with primary in 46%, lung in 22%, liver and bone in 8% of patients. 27 patients were in group A and 15 in group B.

Efficacy: (Preliminary Results) CR: 1, PR: 4, the five responses have been observed among the 21 evaluable patients of group A (24%).

Safety: The following WHO grade 3–4 toxicities have been reported (% of patients): neutropenia: 27%, (with febrile neutropenia and/or sepsis in 8%), delayed diarrhea: 33%, nausea/vomiting: 30%, alopecia: 32%. One toxic death occurred due to severe diarrhea, neutropenia and sepsis.

Conclusion: The most concerning toxicity is the combination of severe diarrhea and neutropenia. Since these two toxicities are probably favourized by abdominopelvic radiotherapy, a special attention should be paid to patients with extended fields. CPT 11 appears an effective drug in not pretreated C.C.U.

1179 POSTER

PROGNOSTIC FACTORS AND PATTERNS OF FAILURE IN STAGE I ENDOMETRIAL CARCINOMA TREATED WITH ADJUVANT RADIOTHERAPY

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Purpose: To evaluate the therapeutic outcome of patients with high-risk for recurrence, to describe patterns of failure as well as other important pretreatment and treatment factors which can influence to improve control and lengthen survival. *Methods:* From 1989 to 1990, 213 patients with endometrial carcinoma with high-risk attributes and disease confined to pelvis were prospectively treated with adjuvant pelvic radiation. The median age was 59.2 years. The Figo/1988/stage distribution was as follows: Ib/G2–G3/ = 61, Ic/G1–G3/ = 83, IIa/G1–G3/ = 10, IIb/G1–G3/ = 14, IIIa/G1–G3/ = 6, unknown stage /G1–G3/ = 39. All patients were treated with combined /EBRT/ICBHTR/radiotherapy. The treatment was tailored to the known prognostic factors: grade 1 and greater than 50% myometrial invasion, grade 2 and 3 with less (33%) or greater than 50% myometrial invasion and involvement of the isthmus/cervix. Results were analyzed for specific, and relapse-free survival. *Results:* Overall 5 year survival was 79%. Five-year specific survival/5 yrs/per stage was 86% in stage Ib, 79% in Ic, 82% in IIa, 72% in IIb and 43% in IIIa. Figo substage in addition to depth by thirds /$\leqslant$2/3 vs >2/3/grade/1 vs 2 or 3/ age /$\leqslant$55 vs >55/ were predictive for 5 years in univariant analysis. 5-year specific survival decreased with increasing grade and substage from 89% for grade 2 and substage Ib to 70% for grade 3 and substage Ic. /$p < 0.001$/ the cervix invasion was more often associated with grade 3 /56% vs 21%/ and deep myoinvasion /64% vs 30%/ than cases without cervix invasion. 5-year relapse-free survival was 78%; 22% relapse, of which 19% distant and 3% local relapse. Multivariant analysis of the above factors revealed Figo stage in addition grade, age and depth by thirds to be independent predictors of outcome. *Conclusion:* Patients with high risk attributes demonstrated to have disease confined to the pelvis can achieve exellant local-free survival following adjuvant pelvic radiation. However, prospective randomized trials in the same subset of high risk patients, employing adjuvant cytotoxic chemotherapy, hormonal therapy and/or whole abdominal-pelvic radiation should be considered in an attempt to improve survival.

1180 POSTER

A PHASE II STUDY OF GEMCITABINE IN ADVANCED CERVIX CARCINOMA

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In a phase II study in patients with locally advanced (Stage IIIB) and metastatic (Stage IV) histologically proven cervix carcinoma, gemcitabine was given at a dose of 1250 mg/m^2 weekly for 3 weeks (days 1, 8 and 15 followed by 1 week of rest), these 4 weeks constituting 1 cycle of chemotherapy. The patients were chemonaive, had adequate bone marrow reserves, liver and kidney function and bi-dimensionally measurable disease, pelvic disease being measured by means of magnetic resonance imaging. To date, 42 patients have been entered into the study and the data for the first 30 patients is available for analysis. Of these 30 patients, 28 are evaluable for efficacy analysis, having received at least 3 doses of gemcitabine within the first 7 weeks of study participation. 2 patients were not evaluable for efficacy because they did not receive 3 doses of gemcitabine. The average age of the patients was 50 years (29–64 years) and the proportion of stage IIIB and stage IV disease was 53% and 47%, respectively. A partial response has been confirmed in 5 patients giving a response rate of 17.9% (5/28). All 30 patients were evaluated for toxicity. The respective WHO grade 3 and 4 toxicities were: leukopenia 10%

and 7%; neutropenia 13% and 3%; thrombocytopenia 13% and 0%; anaemia 57% and 13%; nausea and vomiting 27% and 0%; diarrhea 3% and 0%; asthenia 7% and 0%; and peripheral oedema 3% and 0%. Regarding the haematological toxicity of anaemia, 1 grade 4 anaemia was probably a drug related toxicity, and the remainder all probably disease related. These initial findings of gemcitabine as single agent therapy in advanced cervix carcinoma are encouraging and should be investigated further. The study is ongoing.

1181 POSTER

10 YEAR RESULTS OF EXTERNAL BEAM AND HDR INTRACAVITARY IRRADIATION IN THE PRIMARY TREATMENT OF CANCER OF THE UTERINE CERVIX

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From August 1980 to December 1990, 303 patients with cancer of the uterine cervix underwent primary irradiation in a combination of external beam and HDR intracavitary treatment at the Department of Radiation Oncology at the Sisters of Mercy Hospital in Linz, Austria. All patients were classified according to the FIGO rules: Stage I 54 patients, stage II 171, stage III 75 and stage IV 3 patients. 8 patients were lost to follow up. The mean follow up time of survivors is 110 months. A complete remission could be achieved in 282 patients, which is 93%; persistent turnout was found in 21 patients at the first follow up check 3 to 5 months after completion of irradiation. The actuarial overall survival probability for all patients at 5 and 10 years is 62% and 42% respectively, the disease specific survival probability is 68% and 64%. The local control rate at 5 and 10 years is 73% and 72% respectively. According to stage, disease specific survival lies at 90% for stage I, 69% for stage II, and 48% for stage III and IV at 5 years, and at 10 years 87%, 66% and 41% respectively. The actuarial local control probability for stages I, II, and III/IV is 90%, 74%, 60% respectively at 5 years, and 88%, 74%, and 56% at 10 years. (Kaplan-Meier calculations). From all 303 patients 34 suffered from 40 severe and moderate side effects (glossary of Chassagne and Sismondi). The rate for grade II complications is 10% and for grade III 3%. We conclude that HDR after loading in addition to external beam radiotherapy is a very effective tool for primary irradiation of cervical cancer, and a safe one in experienced hands.

1182 POSTER

THERAPY OF PSEUDOMYXOMA PERITONEI BY A MOAB

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Pseudomyxoma peritonei is a rare clinical diagnosis of massive abdominal swelling by a gelatinous material, produced from an ovarian or appendiceal primary. It is histologically benign, but behaves in a malignant fashion with recurrent growth. Treatment is usually unsuccessful and the prognosis is poor. The disease remains localized to the peritoneal cavity and the clinical course consists of repeated episodes of intestinal obstruction caused by extrinsic compression, that seems only to be relieved by surgical debulking. We used monoclonal antibody imaging to provide accurate evaluation of the progression of disease and the region involved within the peritoneal cavity. In this study, we injected I-131-labeled monoclonal antibody B72.3 recognizing TAG-72 antigen on epithelial carcinomas, eventually, also present within pseudomyxoma cells. Gamma imaging was performed at 1, 3, 7 and 14 days after iv-injection (2 patients). It revealed targeting of all known lesions. Estimated tumor dose for intraperitoneal tumor (MIRD formalism) was 1 Gy/75 MBq. The MoAb was also injected intraperitoneally (1 patient) and most of the activity retained in the peritoneal cavity, while maximum blood radioactivity was measured between 8–20 hrs. Digital autoradiography of diagnosed pseudomyxoma tissues (5 patients) demonstrated specific targeting of the antibody as well. Our results indicate that this anti-TAG antibody can be used for targeting of intraperitoneal pseudomyxoma, and may be useful in radioimmunotherapy.

1183 POSTER

THE VALUE OF CERVICOGRAPHY IN CERVICAL CANCER SCREENING

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It has been suggested that cervicography is suitable for use as a screening procedure for cervical cancer. Studies have shown it to be considerably more sensitive than cytology.

Asymptomatic population of 1700 women was involved in a screening programme. They were investigated by cytology, colposcopy and cervicography. Sensitivity, specificity, as well as positive and negative predictive value of the three methods were determinated.

CIN was revealed in 114 (6.7%) and invasive cancer in 12 (0.72%) of patients.

Sensitivity of cervicography was 0.89, specificity 0.92, positive predictive value 0.58 and negative predictive value 0.96.

Compared with other methods, cervicography was more effective than cytology and as effective as Colposcopy in screening for cervical cancer.

1184 POSTER

THE PROGNOSTIC SIGNIFICANCE OF NM23, CATHEPSIN-D, EGFR AND C-ERBB-2 IN CERVICAL CANCER

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The prognostic significance of the expression of NM23, Cathepsin-D, EGFR and C-erbB-2 was evaluated by immunohistochemistry on 176 cases of cervical carcinoma stage IB. All were treated by radical hysterectomy with pelvic lymphadenectomy during 1987 to 1990 and followed-up until 311294. Expression of NM23 was less common in adenocarcinoma (14/28 = 50%) than in squamous cell (97/132 = 74%) or adenosquamous cell carcinoma (13/19 = 81%). Expression of Cathepsin-D was seen in 49% of tumors with no difference between histologic types. Overexpression of EGFR was seen in 26% of squamous cell tumors but only in 4% and 6% of adeno and adenosquamous cell tumors.

In univariate analysis of survival, NM23 expression was associated with a RH of 3.3 ($P = 0.027$), Cathepsin-D expression with a RH of 3.6 ($P = 0.002$), EGFR overexpression with a RH of 2.0 ($P = 0.07$), while c-erbB-2 expression had no prognostic significance. In multivariate analysis including tumor size, vessel invasion, grade of differentiation and tumor invasion into parametria, Cathepsin-D expression and EGFR overexpression were significant, while NM23 was of marginal significance ($P = 0.07$).

1185 POSTER

P53 AND EPIDERMAL GROWTH FACTOR RECEPTOR (EGF-R) IN CERVICAL EPITHELIUM: RELATIONSHIP TO HUMAN PAPILLOMAVIRUS (HPV) INFECTION

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Paraffin sections of 66 cervical tissues with histology ranging from normal through HPV infection (warts) to cervical intraepithelium neoplasia (CIN) were examined for p53 and EGF-r expression, by immunohistochemistry (IHC). Sections were examined for HPV with non isotopic *in situ* hybridization using probes against non-oncogenic HPV 6, 11 (12.5% positive) and oncogenic HPV 16, 18 (40.0% positive, WV or CIN pts) and 31, 33, 35 (5.0% positive, CIN pts). P53 nuclear positivity was detected in a small number of cells in normal tissue, warts and CIN of all degrees. This was predominantly basal and parabasal but extended through the epithelium in more severe degrees of CIN. EGF-r was detected mainly in basal and parabasal regions of normal tissue and warts, but increased in CIN to include more superficial regions, paralleling the degree of CIN. In HPV related neoplasia, wild type (WT) p53 is degraded by binding to E6 protein and rendered non functional. We suggest that the p53 demonstrated in normal tissue, HPV infection and CIN is persistent WT rather than the mutated form. Data will be presented on a further 100 pts attending a G.U.M. clinic.