Lambert6, K. Lambein7, G. De Meerleer3

(n=22 or 37%). Lymph nodes. Para-aortic irradiation was performed if N+

uterus, cervix, upper vaginal 1/3 to ½, parametria and pelvic lymph nodes respectively; 45 Gy (minimal dose) to the

treatment was performed. Dose prescription was: 62 Gy and delivered in 25 fractions. No neoadjuvant brachytherapeutic

Radiation consisted of an Intensity Modulated Arc Therapy patients (86%), consisted of weekly cisplatin (40mg/m2).

12/2005 and 08/2014. Chemotherapy, administered in 51

treated (Figo IB: n=6; II: n= 41; III: n= 9; IV: n=3) between

Materials and Methods:

results of this approach.

advancing the expression of pRb positive cells (2 GyE= 1.8, 7 GyE=1.94), but showed no significant expression of p53 in the control group. W12 cells (HPV 16 episomal) showed no change of pRb expression in the control group or after RT. C12 RT induced an increase of pRb expression (2 GyE=1.5, 7 Gy=2.9). There was no significant change of p53 expression in W12 and S12 cells after RT. C12- RT showed no effect on cell cycle distribution in W12/S12 and C33A cells. 48 h after irradiation with 7 Gy photons in C33A cells and 24 h after RT in S12 cells a G2/M-block was induced.

Conclusions: The effect of carbon-ion-RT on protein expression seems to be dependent on HPV-status and type of protein with no effect on p53 or on HPV-negative cells, but a strong effect on pRb expression in HPV-positive cells. The converse effect of carbon-ion-RT compared to photon-RT on HPV positive cell with integrated HPV regarding pRb expression indicates that carbon-ion therapy might overcome HPV-integration induced radioresistance.

PO-0757

Neo-adjuvant chemoradiation for locally advanced cervical cancer: a promising report on outcome


1Vandecasteele Katrien, Radiation Oncology, Gent, Belgium

2Ghent University Hospital, Gynecologic Oncology, Gent, Belgium

3Ghent University Hospital, Radiation Oncology, Gent, Belgium

4Ghent University Hospital, Medical oncology, Gent, Belgium

5Ghent University Hospital, Radiology, Gent, Belgium

6Ghent University Hospital, Nuclear Medicine, Gent, Belgium

7Ghent University Hospital, Pathology, Gent, Belgium

Purpose/Objective: Chemoradiation followed by a brachytherapeutic boost is standard of care for locally advanced cervical cancer (LACC). In the past, we implemented safely the use of neo-adjuvant chemoradiation using arc therapy. This allowed for a safe completion hysterectomy. This is a report on the long-term outcome results of this approach.

Materials and Methods: Fifty-nine patients with LACC were treated (Figo IB: n=6; II: n= 41; III: n= 9; IV: n=3) between 12/2005 and 08/2014. Chemotherapy, administered in 51 patients (86%), consisted of weekly cisplatin (40mg/m2). Radiation consisted of an Intensity Modulated Arc Therapy delivered in 25 fractions. No neo-adjuvant brachytherapeutic treatment was performed. Dose prescription was: 62 Gy and 60 Gy (Dmax) to the primary tumour and PET/CT-positive lymph nodes respectively; 45 Gy (minimal dose) to the uterus, cervix, upper vaginal 1/3 to ½, parametria and pelvic lymph nodes. Para-aortic irradiation was performed if N+ (n=22 or 37%).

Six weeks after the neo-adjuvant chemoradiation a hysterectomy was performed. Suspected lymph nodes at the start of the treatment were resected selectively.

Radiotherapeutic and surgical feasibility and the low morbidity/toxicity rates have been published before.

Results: Median FU is 33 months (3-101m). Median age at diagnosis was 56y (21-89). Pathologic complete response rate is 36% (ypT0: 36%; ypT1a: 26,4%; ypT1b: 28,8%, ypT2a: 1,7%; ypT2b: 6,8%). Lymphnode resection was performed in 29 patients of which 6 had positive nodes. Surgical margins were free of disease in all but 2 cases (a brachytherapy boost was performed). Two- and 5-year local control rates are 94%. Two patients relapsed in a pelvic lymph node (2- and 5-year regional control = 96%). Two- and 5-year distant metastasis free survival is 91%. One patient developed a lung metastasis 67 months after primary diagnosis, after resection no progression was noted. Two- and 5-year disease-specific survival are both 94% and 88%. Two- and 5-year OS are 88% and 69% (4/9 death causes were not cervical cancer related).

Conclusions: Neo-adjuvant chemoradiation using modern radiotherapy techniques leads to promising control and survival rates. Further research should be considered to confirm these promising data.

PO-0758

Wilms tumor outcomes at a single institution treated by Children’s Oncology Group (COG) protocols

C. Hobbs1, M. Olson2

1Mayo Clinic, Radiation Oncology, Jacksonville Florida, USA

2Baptist Radiation Oncology, Radiation Oncology, Jacksonville Florida, USA

Purpose/Objective: Wilms tumor or nephroblastoma is the most common primary renal tumor of children, with about 500 cases per year in the United States. Treatment is individualized by tumor histology, stage, and a variety of biologic factors that help determine a patients’ risk strata, and may include surgery, chemotherapy, and radiation therapy. This study sought to evaluate the outcomes for patients with Wilms tumor treated at a single institution.

Materials and Methods: A retrospective review was performed of all children with Wilms tumor treated at a single institution from January 1994 through December 2012. Patients were staged by the NWTS system and managed on- or per-COG protocols. Stage I and II patients were generally managed with surgery and adjuvant chemotherapy. Stage III patients were generally managed with surgery followed by adjuvant chemotherapy and flank/abdominal radiotherapy. Stage IV patients were most commonly managed with surgery, chemotherapy, and flank/lung radiotherapy. Stage V patients generally received only surgery and chemotherapy. MedCalc was utilized to develop Kaplan-Meier plots of progression free and overall survival for the population.

Results: Of the 64 treated patients, there were 7 patients with recurrence (10.9%). There were no recurrences in 11 patients with stage I disease.

There were 15 patients with stage II disease of which 3 patients (20%) experienced recurrence. Two patients
experienced a local recurrence at 5 months and 22 months, respectively (one of these patients developed a second local recurrence 3 years after the first recurrence). One patient developed a lung metastasis 17 months after diagnosis. All recurrent stage II patients were treated and are alive with no evidence of disease (NED). Of 41 stage III patients, a recurrence was experienced in 3 patients (7%). All of these recurrences were in the lung and were experienced at 4 months, 5 months, and 7 months after diagnosis. One out of eleven patients (9%) with stage IV disease experienced a recurrence. This was a local recurrence experienced 4 months after diagnosis. None of the 8 patients with stage V disease experienced a recurrence. Risk of progression based on stage is shown in the table below. The median time to failure was 6 months from diagnosis. Of the eight total recurrences (including 2 local recurrences in a single patient), 6 were salvaged and currently have no evidence of disease. Two patients are alive with active disease. Progression-free survival was 89%. Sixty three of the 64 patients are still alive, giving an overall survival of 98.4%. The single patient who died had stage IV disease at diagnosis and experienced a recurrence prior to death.

<table>
<thead>
<tr>
<th>Stage</th>
<th>PFS (%)</th>
<th>OS (%)</th>
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<tbody>
<tr>
<td>I</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>II</td>
<td>93</td>
<td>100</td>
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<td>III</td>
<td>91</td>
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<tr>
<td>IV</td>
<td>100</td>
<td>100</td>
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</table>

Conclusions: Children with Wilms tumor can have excellent long-term outcomes when managed per NWTS/COG protocols. After 11 years of median follow up, PFS and OS were both excellent at 89% and 98.4%, respectively.

PO-0759

Modern radiotherapy improves survival in paediatric patients with Ewing sarcoma

V. Granados Prieto1, J.L. Lopez Guerra2, C. Marquez1, G. Ramirez3, P. Cabrera1, J.M. Praena-Fernandez2, M.J. Ortiz Gordillo1

1University Hospital Virgen Del Rocio, Paediatric oncology, Sevilla, Spain
2Department of Radiation Oncology and Molecular Radiation Sciences, Johns Hopkins University, Baltimore, USA
3Grupo de Apoio ao Adolescente e à Criança com Câncer, Department of Radiations, Sao Paulo, Brazil

Purpose/Objective: To analyze the epidemiological characteristics of paediatric patients with Ewing Sarcoma (ES) and assess the outcome (overall survival [OS] and disease free survival [DFS]) as well as potential prognostic factors associated with survival after the multidisciplinary treatment.

Materials and Methods: Retrospective study of paediatric patients with ES treated during the period 1979-2014. SPSS 19.0 was used for statistical analysis and Kaplan-Meier’s method for the analysis of survival. The potential risk factors were assessed using univariate and multivariate analyses.

Results: During the last 35 years, 102 patients were treated at our Institution. Male patients were 55.8% and the median age was 10.5 years (range 2-19). The pain was the most common symptom at initial presentation. Non-axial location was observed in 62.8% of patients and non-metastatic or multicentric disease in 83.3%. The median time between the onset of symptoms and the date of diagnosis was 3.07 months (range: 0.1-36.5 months). 68.7% received surgery, 49% radiotherapy (with radical intention, before or after surgery) and 25.5% hematopoietic stem cell transplantation. The 2 and 5-years OS was 81% and 57%, respectively. Two and five years DFS was 68% and 54%, respectively. Local recurrence occurred in 11.8% and distant relapse in 36.2% of patients. Secondary malignancies occurred in 5% of patients (2 acute myeloblastic leukemia, 2 myelodysplastic syndromes and one pleomorphic sarcoma). Risk factors for OS observed in the univariate analysis were: an erythrocyte sedimentation rate at diagnosis > median (Median 43; HR: 4.42; p = 0.02), the lack of surgery (HR 1.97; p = 0.024), poor pathological responder (> 10% viable tumor) to induction chemotherapy (HR 2.88; p = 0.012), the use of cobalt units vs. linear accelerators (HR 2.93; p = 0.009) and the response to multidisciplinary treatment (progression versus rest of responses; HR 6.52, p <0.001). In multivariate analysis only the radiotherapy units (HR 4.21; p = 0.030) and the response to treatment (Response vs progression: HR 0.10, p < 0.001) retained statistically significance.

Conclusions: Our results suggest that paediatric patients with ES who have a good response to the multidisciplinary treatment or those treated with linear accelerators vs cobalt units have a lower risk of mortality. Therefore, it seems that technological development has contributed to improve the survival in these patients.

PO-0760

Patterns of stereotactic radiotherapy in pediatrics: results from an international pediatric research consortium

S. Alcorn1, M. Chen2, K. Dieckmann3, R. Ermoian4, E. Ford5, D. Kobyczewka6, M. Ladrà3, S. MacDonald7, A. Nechesnyuk5, K. Nilsön5, R. Villar8, B. Winey9, S. Terezakis1

1Johns Hopkins University, Department of Radiation Oncology and Molecular Radiation Sciences, Baltimore, USA
2Grupo de Apoio ao Adolescente e à Criança com Câncer, Department of Radiations, Sao Paulo, Brazil
3University Hospital Virgen Del Rocio, Methodology Unit-Fundación Pública Andaluza para la Gestión de la Investigación en Salud de Sevilla, Sevilla, Spain

Conclusions: Children with Wilms tumor can have excellent long-term outcomes when managed per NWTS/COG protocols. After 11 years of median follow up, PFS and OS were both excellent at 89% and 98.4%, respectively.