be performed. Two patients didn't become resectable and received only radiotherapy after induction. Pathological complete response (pCR) defined by absence of viable tumour cells was found in 7 resected patients and minimal residual disease defined by less than 10% of viable cells in three other patients. For the 17 patients with a follow up greater than 3 years, 3 years overall survival was 71% and 3 year disease free survival was 53%, which is at least comparable to largest surgical series. At the time of analysis, all patients with a significant pathological response (n = 10) were alive and disease free.
Conclusion: Induction chemotherapy with FEP regimen is highly active and well tolerated in adenocarcinoma of paranasal cancer. Pathological CR was frequent and strongly associated with long term remission. Prospective trial is warranted to confirm these results.

8531 POSTER

Esthesioneuroblastoma − Clinical Experience From a Regional Cancer Centre in North India

S. Mallick[1], A. Bisaws[1], N. Joshi[1], S. Pandit[1], B.K. Mohanti[1], P.K. Julka[1], G.K. Rath[1]. [1]*All India Institute of Medical Sciences, Radiation Oncology, New Delhi, India*

Background: This study is aimed to assess the clinical management and outcome in patients of esthesioneuroblastoma (ENB).
Methods and Materials: A retrospective review of medical records of patients of ENB (2009−10) was conducted. Primary endpoint of the study was overall survival. Statistical analysis was performed using Kaplan–Meier method (SPSS version 17).
Results: We identified 22 patients of ENB diagnosed at our centre from 2009−10. Altogether 4 patients were excluded due to attrition & 18 patients were evaluable. Median age at diagnosis was 29 years (Range 3−67 years). A male preponderance was noted (male:female = 2:1). Tumour stage was Kadish B in 7 & Kadish C in 11 patients. Cervical lymphadenopathy was noted in 4 patients at presentation. Common symptoms included epistaxis in 50%; nasal obstruction, proptosis & visual dimness in 27.77% each & nasal mass in 16.66% patients. 11/18 patients underwent surgery. Radiotherapy was used in all patients-16 with radical intent (median dose 60 Gy; range45−70 Gy) & 2 with palliative intent (range 8−30 Gy/1−10fractions). Radiation plan was 2 dimensional using telecobalt in 2 patients & 3 dimensional using megavoltage X-rays in 16 patients. Treatment volume encompassed the gross tumour with a safety margin of 1−2 cm. Neck was addressed in patients with involved nodes. Common field arrangement included 2 anterior oblique or anterolateral or superior & inferior vetex beams. Chemotherapy was used in the following setting: neoadjuvant in 10 patients (common regimens CAP-cyclophosphamide, adriamycin & cisplatin; EP-etoposide & cisplatin; VAC-vincristine,actinomycinD, cyclophosphamide), concurrent in 3 patients with weekly cisplatin & adjuvant in 5 patients with EP regimen. 7 patients had died at last follow-up with causes being local recurrence in 2, nodal recurrence in 2, distant dissemination in 3 (metastases in bone, brain & chest wall respectively), disease persistence in1 & unknown in 1. After a median follow-up of 14.43 months, 2 year overall survival & progression-free survival were respectively 62%±13% & 49.7±14%.
Conclusion: Management of esthesioneuroblastoma poses clinical challenge due to rarity, complex topography of disease, morbidity of extensive surgery and absence of well defined treatment protocols. Our institutional results are modest and clinical management has been quite heterogenous. In future treatment guidelines need to be framed − surgery alone for Kadish A tumour, surgery with post-operative radiation in Kadish B tumour & multimodality management- surgery (craniofacial resection) followed by chemoradiation in Kadish C tumour. Neoadjuvant chemotherapy merits trial in Kadish C tumours which are upfront unresectable.

8532 POSTER

Adjuvant Chemoradiation in High-Risk Head and Neck Cancer

S. Torres[1], M. Ferreira[1], I. Sargento[1], J.O.A.O. Oliveira[1]. [1]*Instituto Portugues de Oncologia Francisco Gentil Lisboa, Medical Oncology, Lisboa, Portugal*

Background: Adjuvant chemoradiation (adCRT) is the standard of care in resectable high-risk head and neck squamous cell carcinoma (HNSCC). It improves loco-regional control and disease-free survival compared to radiotherapy (RT) alone, but increases adverse effects. The aim of our study was to evaluate the efficacy and toxicity of adCRT in a clinical practice setting.
Methods: We performed a retrospective review that included all patients (pts) with resected HNSCC treated with adCRT, cisplatin-based, from 2007 to 2009 at our Institution. Response evaluation by clinical observation (direct and by fiberoptic endoscopy when appliable) and loco-regional computed tomography scan 3 months after completion of treatment, disease status at last follow-up and acute and late toxicities were reviewed. Overall survival and disease free survival were estimated using Kaplan–Meier methodology.
Results: 94 pts included, 92.5% male, median age 54.5 years. Median follow-up: 16.3 months. The incidence of stage IV disease (77.6%) and major high risk pathological features such as involved surgical margins (43.6%) and extranodal spread of the disease (60.6%) was high. Compliance to treatment was good: 95.2% of pts completed RT treatment and 96.8% received at least 2 chemotherapy treatments. There was a high incidence of grade 2−3 skin (57.4%) and mucous-membrane (68.1%) acute adverse effects; 23.4% of pts lost more than 10% of initial body weight. Late toxicities (grade 2 or more xerostomy, neck fibrosis and osteoradionecrosis) were present in 40.42% of pts at least 3 months after treatment. No deaths occurred due to treatment. At last follow-up 75.5% of pts were alive; 71% in complete remission. Local or regional recurrence as the first site of treatment failure occurred in 12% of pts. The Kaplan–Meier estimates of 2-year disease free survival and overall survival were 65% and 80%, respectively.
Conclusions: Our data confirms the good outcome of pts treated with adCRT in a clinical practice setting. As we recorded a high incidence of adverse effects, a less toxic radiosensitizing regimen is desirable.

8533 POSTER

First Results of an Uncontrolled, Phase II Trial of Induction Chemotherapy With Cetuximab and Docetaxel-Cisplatin-5FU Followed by Cetuximab+Radiotherapy in the Responders in Locally Advanced Resectable Squamous Cell Cancer of the Head and Neck

E. Remenar[1], J. Lövey[2], P. Koltai[1], K. Horvath[3], M. Gödeny[3], M. Kasler[1]. [1]*National Institute of Oncology, Head and Neck Oncology, Budapest, Hungary;* [2]*National Institute of Oncology, Radiotherapy, Budapest, Hungary;* [3]*National Institute of Oncology, Diagnostic Radiology, Budapest, Hungary*

Background: The objective of this study was to determine the efficacy and safety of adding cetuximab to the standard TPF induction chemotherapy (ICT), administered with the aim of selecting patients for organ preservation.
Materials and Methods: Eligible patients were those who had untreated, Stage III, IV, resectable cancers of the oral cavity (OC), oropharynx (OPH), hypopharynx (HPH), or larynx (L). They had to be enrolled until at least 25 patients completed cetuximab+radiotherapy per protocol.
Treatment: 2 cycles of 75−75 mg/m^2 docetaxel and cisplatin (d1, d22), 750 mg/m^2 5-fluorouracil/day in continuous infusion (d1−5, d22−26), and cetuximab (400 mg/m^2 loading dose, then 250 mg/m^2 weekly). Complete (CR) or partial (PR) responders were treated with 70 Gy radiotherapy (RT) (2 Gy/day) with weekly 250 mg/m^2 cetuximab. Tumour assessment (CT/MRI) was performed before treatment, at the end of ICT, and three months after RT. Primary endpoint: rate of CRs 3 months after the end of RT.
Results: Ten OC (20%), 19 OPH (38%), 15 HPH (30%), 6 L (12%) patients were enrolled; 43/7 men/women, median age: 56 years. Response rate (RR) to ICT: PR: 33/50 (66%), stable disease (SD): 14/50 (28%), progressive disease (PD): 1/50 (2%), 1 OC and 1 HPH cancer patients (4%) were lost for measurement. Primary tumour sites of the ICT responders were: 1 OC, 16 OPH, 11 HPH, 5 L.
Twenty-seven of 33 ICT-responders were treated with RT+cetuximab per protocol. RR to RT: 21/27 (77.8%) CR, 5/27 (18.5%) PR, 1/27 (3.7%) PD. Grade 3,4 adverse events (AEs) during ICT were neutropenia 15 cases + 5 febrile neutropenias, 8 cases of low ion levels, 5 liver enzyme elevations, 2 hypersensitivity reactions to cetuximab, and one sudden death of uncertain cause. Grade 3,4 AEs during RT were 7/27 mucositis, 4/27 skin reactions, 1 patient died of pneumonia and hepatic insufficiency during RT. Three of 27 patients were feeding tube- and 2 of them also tracheostomy-dependent after the end of RT.
Conclusions: High RR to ICT in all but OC cancers was observed. Most of the ICT responders had CR after RT. Gr 3,4 AEs were common, but manageable, in patients with good general condition.

8534 POSTER

Voice Quality in Patients Treated With Surgery or Radiotherapy for Early Glottic Cancer − a Comparative Study

L. Cerezo[1], M. López[1], M. Martin[1], J. García[2], Y. Ibañez[1], A. Hinojar[2]. [1]*Hospital de la Princesa, Radiation Oncology, Madrid, Spain;* [2]*Hospital de la Princesa, Otholaryngology, Madrid, Spain*

Background: To retrospectively analyze the differences in voice quality by means of Voice Handicap Index (VHI-10) in patients with early glottic cancer treated with surgery or radiotherapy for early glottic cancer.

Patients and Methods: From January 1991 to December 2010, 160 patients with T1-T2N0M0 vocal cord carcinoma were treated with curative intent. Of them, 107 (67%) received surgery and 51 (33%) radiation therapy. Surgery consisted in endoscopic laser excision in 45% of cases, and cordectomy in 22%. Three fractionation regimens were used for radiation therapy: 66−70 Gy at 2 Gy/fx; 63 Gy at 2.25 Gy/fx, or 60 Gy at 2.5 Gy/fx, 5 fx/week in all cases. Twenty five patients from the surgery group and 22 from the radiation group responded to the VHI questionnaire in their last follow-up visit, at least 3 months after treatment. The VHI consisted on 10 voice-related questions, scored from 0 to 5, being 0 the minimum voice impairment (minimum dysphonia) and 5 the maximum (maximal dysphonia).
Results: With a median follow-up of 73 months, there were no significant differences in 5-year disease-free survival among patients treated with surgery (92%) or radiotherapy (84%). Mean value of VHI-10 was 0.9 for the radiation group and 1.08 for the surgery group. Only one patient in the radiation group had a score >2 (4%), whereas 5 patients in the surgical group (22%) had scores >2 (range 2−3.2). There were no differences in voice quality between the different fraccionation schemes. Neither were significant differences between patients treated with laser excision or cordectomy.
Conclusions: Radiation therapy highly preserves the quality of the voice in patients with early glottic cancer. Compared with surgery, no statistically significant differences were found globally, though a higher percentage of the surgical patients referred more severe impairment of their voice.

8535 POSTER

Trends in Incidence of Head-and-Neck Tumours Based on Human Papillomavirus Infection − Differences Between North and South of Portugal

M. Henriques Abreu[1], E. Matos[2], J. Amado[3]. *[1]Portuguese Institute of Oncology of Porto, Medical Oncology, Porto, Portugal; [2]Biomedical Sciences Institute of Abel Salazar University of Porto, Health Comunity Department, Porto, Portugal; [3]Portuguese Catholic University, Center for Intersiciplinary in Health Research, Porto, Portugal*

Background: The recognition that human papillomavirus (HPV) plays any role in head-and-neck tumours (HNT), has important implications for cancer prevention. As vaccination for HPV becomes widely available, it is necessary to know the real distribution and incidences of HNT at different anatomical sites and whether the incidence of HPV-associated and potentially HPV-associated cancers are increasing.
Material and Methods: Data were extracted from two Population-Based Cancer Registries (Oncological Registry of North and Oncological Registry of South of Portugal). 12,357 HNT were analyzed since 1996–2006 in a population of 7,700,062 residents. Crude and age-standardized incidence rates (European population) were calculated considering sex, age group and country regions. The anatomical sites analyzed were that included in the International Classification of Disease, tenth edition as C00-C14 and C30-C32. To assess impact of HPV infection, the squamous cell carcinomas sites were categorized according to anatomical location, as: HPV-associated, potentially HPV-associated or unrelated. The relation between incidence and these groups were evaluated with a Poisson regression model.
Results: Crude and age-standardized incidence rates were 29.7 and 28.0/100,000 for men and 4.3 and 3.2/100,000 for women. From the first period (1996–1998) to the last one (2005–2006), the standardized rates increased in both sexes (in men from 27.3 to 29.9 and for women from 2.9 to 3.9). The annual change on the rates was estimated in 1.82%. The incidence variation was explained in 84% of the cases by age, sex and HPV infection. The most frequent anatomical sites in both regions were oral cavity, lip and larynx. The incidence rate ratio for the potentially HPV-associated tumours was 4.2 times greater when compared with the HPV-associated after controlling the variables sex, age, period of time and country region.
Conclusions: We observed a significant increase in the incidence of these tumours over time, with higher incidence rates in the South of the country. The HPV infection plays a determinant role in the epidemiology of these tumours and the groups classified as potentially HPV-related were definitively those with the major incidence rates. Further studies are necessary to assess the effect of HPV vaccine on these tumours.

8536 POSTER

Effects of Antiemetic Prophylaxis With Aprepitant on Outcomes From Primary Chemoradiation for Locally Advanced Squamous Cell Carcinoma of the Head and Neck (LASCCHN)

M. Ong[1], D. Palma[1], V. Velker[1], J.G. Lenehan[2], S.D. Ernst[1], E. Winquist[1]. *[1]London Health Sciences Centre, Department of Oncology, London, Canada; [2]London Health Sciences Centre, Department of Medicine, London, Canada*

Background: Antiemetic prophylaxis is known to improve tolerability of chemoradiation (CRT) for LASCCHN, but the effects on treatment outcome are less established. We explored the effects of the neurokinin-1 antagonist aprepitant in this single-institution retrospective review.
Material and Methods: Patients with LASCCHN of the oropharynx, oral cavity, hypopharynx, and larynx diagnosed January 1, 2006 − January 1, 2009 and treated with primary CRT were identified. Patients treated with adjuvant or palliative intent were excluded. Treatment and outcome data were collected by chart review. Aprepitant use was determined from pharmacy prescriptions and records. Outcomes were assessed in two eras based on the availability of aprepitant in Canada − period A: January 1, 2006 to September 30, 2007, and period B: October 1, 2007 to January 1, 2009.
Results: 148 patients (74 in each period) met inclusion. Patient and tumour characteristics were similar between periods A and B, including stage (18.2% III, 62.2% IVA, 19.6% IVB), oropharynx primary (67.6%), and male gender (83.1%). Mean RT delivered was 6861 cGy (range, 3800–7210), and concurrent chemotherapy consisted of high-dose cisplatin 100 mg/m^2 (HDC, 62.8%), weekly carboplatin (14.9%) or cisplatin (9.5%), or cisplatin/docetaxel/5-FU induction followed by weekly carboplatin (TPF-CRT, 12.8%). Median overall survival was 28.8 months with median follow-up of 36 months. Aprepitant use was higher in period B (67.6 vs 5.4%, $p < 0.0001$), highest with HDC and TPF-CRT regimens in period B (84.7 vs 7.5%, $p < 0.0001$), and associated with more cumulative cisplatin administered (269.2 vs 247.7 mg/m^2, $p = 0.046$). No changes in surgical salvage post-CRT (27.0 vs 20.3%, p=NS), recurrence (24.3 vs 20.3%, p=NS), or cancer-related death (16.2 vs 16.2%, p=NS) were observed. However, non-cancer and treatment-related deaths were significantly lower in period B (3.4 vs 10.8%, $p = 0.031$). In multivariable Cox regression analysis, tumour stage ($p = 0.005$), age ($p = 0.005$), and oropharynx primary ($p = 0.019$) were predictors of overall survival. Although in this model period B did not reach significance ($p = 0.09$), a sensitivity analysis excluding patients only treated with concurrent weekly carboplatin or cisplatin showed an independent association of period B with survival (HR: 0.63, $p = 0.042$).
Conclusions: In this retrospective cohort, the introduction of routine antiemetic prophylaxis with aprepitant in period B was associated with improved delivery of cisplatin and lower non-cancer related mortality, particularly in patients receiving high-dose (100 mg/m^2) cisplatin.

8537 POSTER

Postoperative Radiochemotherapy in Patients With Head and Neck Tumours With Weekly Cisplatin

A. Hervas[1], M.C. Vallejo[1], R. Morera[1], J. Martinez[1], S. Marcos[1], A. Royuela[2], A. Ramos[1]. *[1]Hospital Ramon Y Cajal Madrid, Radiation Oncology, Madrid, Spain; [2]Hospital Ramon Y Cajal Madrid, Bioestatistic, Madrid, Spain*

Background: To describe the compliance, acute toxicity and results of a scheme of postoperative RT/QT with weekly cisplatin in patients (p) with squamous cell carcinoma of head and neck.
Patients and Methods: Between March 2004 and June 2010, 88 p were treated with RT/QT postoperative to present a risk factor for local recurrence (pT3, pT4 or N2, N3, or pT1, pT2 with N0, N1 margins of the resection (<5 mm), involvement of two or more lymph nodes, extracapsular extension or vascular tumour embolization). All received 50 Gy in areas at risk of subclinical disease, with boost (total dose 66 Gy) in high risk areas, in fractions of 2 Gy/day, 5 days a week. Concomitantly planned weekly administration of cisplatin 40 mg/m^2 starting week 1 of radiotherapy.
The statistical package used was SPSS version 17.
Results: The median age was of 58.5 years (range: 36−82 years), 69 males and 19 females. 6p were stage II, 20 p were stage III, 53 p were stage IV-A and 9 pts were stage IV-B. The primary tumour was located in the larynx in 34 p, oropharynx in 17, oral cavity in 26, hypopharynx in 3, other locations in 8. Of the 88 p, 80% received at least 5 cycles and 42% 6 cycles of chemotherapy. No G4 acute toxicity was observed. 29 p showed toxicity G3 (33%). The most common acute toxicity G3 was: mucositis in 21p (24%), and hematological in the rest. The median follow-up was 33 months (range 4−82 months). The specific cause SG at 2 and 5 years was 81% and 58% and DFS at 2 and 5 years was 74% and 61%. The factors