	Younger	Elderly	p-value
Number of patients in the study	128 (66%)	66 (34%)	
Did not receive all planned cycles of IC	21.1%	21.2%	1.00
IC dose reduction	26.6%	34.8%	0.180
Unplanned hospitalisation during IC	5.5%	12.1%	0.153
Proceeded to radical RT following IC	99.2%	97.0%	0.267
Completed radical RT with no prolongation of treatment duration by more than 2 days	95.3%	89%	0.442
Unplanned hospitalisation during RT	7.1%	20.3%	0.014
Did not commence planned CC	10.3%	20%	0.172

8548 POSTER

Induction Chemotherapy Followed by Concomitant Chemo-Radiation in Locally Advanced Nasopharyngeal Carcinoma − a Single Institution Experience

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Background: Nasopharyngeal Carcinoma (NPC) is the commonest Head & Neck cancer in Saudi Arabia. Concomitant Chemo-radiotherapy (CRT) with cisplatin followed by 3 cycles of adjuvant Cisplatin based chemotherapy is the standard of care in patients with locally advanced disease (LANPC). However, the compliance with adjuvant chemotherapy has been unsatisfactory.
Material and Methods: Between August 2002 and July 2010, fifty-four patients (37 males: 17 females) with locally advanced (AJCC Stage III & IV), non-metastatic NPC were treated using Induction Chemotherapy (IC) with Docetaxel, Cisplatin, and 5-FU (TPF) for 3 cycles, followed by Concomitant chemo-radiation using weekly Carboplatin with conventionally fractionated 3-D conformal radiotherapy to a total dose of 65−70 Gy.
Results: Median age was 42 year (15 to 72). Twenty-six patients (48%) had stage IV disease, and 17 (31%) had T4 tumours. Undifferentiated Carcinoma Nasopharyngeal Type accounted for 96% of the cases. Forty-six patients had more than 12 months follow-up (median 42) and are the subject of the following analysis. Two patients died during induction chemotherapy. Of the remaining 44 patients, IC resulted in 25% Complete Clinical Remission, and 72% Partial Remission, an overall Response Rate of 97%. Hematological toxicity was frequent, but manageable. In total, there were 2 local and 2 distant relapses, 2 of them appearing beyond 3-years of follow-up. Two patients died of progressive disease, one is alive with disease, and one local relapse was successfully salvaged with further radiotherapy. For the entire series (46 patients) the 4-year Kaplan–Meier Overall Survival (OS) rate is 88%. For the 44 patients who completed the protocol, the 4-year Disease Free Survival (DFS) rate is 84%. All 8 patients under 23 year of age remain disease-free at more than 6 years median follow-up. One patient developed a suspected grade 3 neurologic toxicity, and another had a cerebral-vascular accident one year following salvage local re-irradiation.
Conclusions: Sequential therapy as used in this group of patients seems well tolerated and yields high remission rate and an encouraging DFS and OS in patients with LANPC. Future development should focus on better risk stratification, and systematic use of Intensity Modulated Radiation Therapy-like techniques. Young adults with LANPC may need a different treatment approach that would include IC followed by response-adjusted chemo-radiotherapy.

8549 POSTER

Influence of Performance Status, Hemoglobin Level, Body Mass Index and Presence of Feeding Tube on Treatment Outcomes and Toxicities in Locally Advanced Head and Neck Cancer Patients Treated With Induction Chemotherapy and Chemoradiation

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Background: Induction chemotherapy followed by chemoradiation (IC-CRT) is a treatment option of LAHNC, but it is associated with significant toxicities. We studied the impact of performance status (PS), hemoglobin level (HB), body mass index (BMI) and the presence of feeding tube (FT+) on overall survival (OS) and toxicity in LAHNC patients (pts) treated with IC-CRT.
Materials and Methods: It is a retrospective study on 100 pts consecutively treated in 2 institutions with CDDP 75 mg/m^2 in combination with paclitaxel 175 mg/m^2, every 21 d, as induction chemotherapy (IC), followed by concurrent chemoradiation (CRT): 70 Gy (2 Gy/d, 35 fractions, 5 times/week) and CDDP 100 mg/m^2 d1, d22 and d43. Pre-treatment ECOG-PS, HB, BMI and FT+ were analyzed as predictors of IC- and/or CRT-related toxicities as categorical variables. OS was estimated by the Kaplan–Meier method and curves were compared with log-rank. A multivariable Cox proportional hazards model was used to control for prognostic factors.
Results: 94 pts were staged as T3−4 and 70 pts as N2−3. Oropharynx (50 pts) and larynx (30 pts) were the most frequent primary sites, and 71 pts had ECOG-PS 0−1. The median number of IC cycles was 3 (1−6) and the response rate to IC was 81%. 79 out of 94 pts completed CRT (14 pts were under treatment and one pt died). The median delivered RT dose in primary tumour was 70 Gy in 61 d, and the median number of concurrent CDDP cycles during RT was 2. There was no association between PS, HB, BMI and FT+, and IC-related G3+ toxicities, and during CRT, ECOG-PS 0−1 pts presented significantly higher rate of G3+ toxicities ($p = 0.040$). The median OS was 17.7 months. In a mean follow-up of 12 months, 31 pts were alive and disease-free. Estimated 2-year OS was significantly better for pts with ECOG-PS 0−1 vs. 2−3 (50% vs. 0%, HR 0.35, $p = 0.002$), HB > 12 vs. <12 g/dL (55% vs. 12%, HR 0.39, $p = 0.007$), BMI > 22 vs. <22 kg/m^2 (70% vs. 27%, HR 0.21, $p = 0.005$) and no FT vs. FT+ (48% vs. 9%, HR 0.38, $p = 0.005$). BMI > 22 kg/m^2 and no FT at the beginning of IC remained significant as favorable prognostic factors in terms of OS in a multivariate analysis.
Conclusions: Our results suggest that LAHNC pts presenting with good PS, high HB levels, high BMI and no FT present better OS rates when treated with IC-CRT, and if confirmed in other studies, these prognostic factors must be taken into account in treatment selection.

8550 POSTER

Moderately Accelerated Radiotherapy Using Intensity Modulated Radiotherapy With Induction and Synchronous Chemotherapy in Treatment of Nasopharyngeal Carcinoma − Early Toxicity and Dosimetry

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Background: Treatment for stage III-IV non-nasopharyngeal head and neck cancer includes induction chemotherapy with docetaxel, cisplatin, 5FU (TPF), radiotherapy and synchronous cisplatin. Induction chemotherapy is recommended for locally advanced nasopharyngeal carcinoma (NPC) and those with bulky nodal disease to treat micro-metastatic spread and reduce tumour volume to allow radiation dose escalation using intensity modulated radiotherapy (IMRT). IMRT also permits coverage of parapharyngeal space disease. We report acute toxicity and dosimetry data in patients with NPC treated with moderately accelerated radiotherapy using IMRT plus induction and synchronous chemotherapy.
Material and Methods: 10 patients, median age 51 years (range, 27−74) with stage IIb-IVc NPC (7/10 bilateral cervical nodal disease) received 3−4 cycles induction chemotherapy (TPF n = 8; PF n = 2), IMRT and up to 2 cycles synchronous cisplatin. CTV1 included primary and nodal disease with a 5 mm and 10 mm margin, respectively; CTV2 and CTV3 areas at intermediate or low risk of microscopic disease. Each CTV was expanded 3 mm to form PTV. Prescribed doses to mean PTV1, PTV2 and PTV3 were 70 Gy, 63 Gy and 56 Gy, respectively, in 33 fractions. Planning organ at risk volumes (PRV) were defined for spinal cord and brain stem with 5 mm margin; optic nerve and optic chiasm with 3 mm margin. Superficial and deep lobes of parotid were delineated. Inverse planning was performed and dose-volume histograms of target volumes and normal structures evaluated. Acute toxicity was assessed by RTOG scoring criteria.
Results: All patients completed induction chemotherapy and radiotherapy; 6/10 completed 2 courses synchronous chemotherapy. One patient received 4 cycles TPF and 1 planned cycle of synchronous cisplatin. 8/10 developed grade 3 mucositis and 7/10 required enteral tube feeding. There was no grade 4 toxicity. Doses to 99% and 95% of mean PTV1 were 65.0±1.0 Gy and 67.3±0.4 Gy, respectively. Doses to 1 cc of critical structures' PRV were within target dose limits in all patients. Mean dose to contralateral cochlea was 50.3±9.0 Gy, exceeding target dose of 50 Gy in 7/10 patients; and to contralateral parotid 41.1±7.2 Gy, exceeding target dose of 26 Gy in all patients.
Conclusions: Treatment of NPC with induction TPF, moderately accelerated radiotherapy and synchronous cisplatin is feasible, although 3/10