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Pemetrexed and Carboplatin concomitant with Thoracic Radiotherapy in Treatment of Elderly Patients with Non- squamous Non Small Cell Lung Cancer (NSCLC): Institutional Experience

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Purpose: This study prospectively evaluated the efficacy and safety of pemetrexed and carboplatin when given concomitantly with thoracic radiotherapy followed by consolidation therapy of pemetrexed and carboplatin in elderly patients with locally advanced non-squamous non-small cell lung cancer (NSCLC)

Patients and Methods: Thirty seven patients with previously untreated, unresectable stage IIIA or IIIB non-squamous NSCLC with ECOG PS of ≤ 2 , ≥ 65 years old, and had adequate organs functions were enrolled into the study between August 2010 and April 2013. Patients received pemetrexed 500 mg/m² and carboplatin area under the curve (AUC) 5 on day 1 repeated every 3 weeks concomitant with thoracic radiotherapy 60-66 Gy over 6-6.5 weeks, followed by pemetrexed and carboplatin for 3 cycles as consolidation therapy. Treatment response, toxicity, progression free survival and overall survival were evaluated.

Results: The median age was 71 (range 65-79). Twenty seven patients (73%) were men. Twenty four patients (65%) had Stage IIIB and 13 patients (35%) had stage IIIA. Performance status was measured by ECOG and it was 0 in 23 patients (62%), 1-2 in 14 patients (38%). Eight (22%) patients had a complete response, 22 (59%) patients had partial response, while 5 (14%) patients had a stable disease and 2 (5%) patients had a progressive disease. The overall response rate (81%, 95% confidence interval (CI):68-96%). The median PFS was 11 months (95% CI: 9.8-12.9 months). Grade 3/4 toxicity were reported as neutropenia in 12 (32%) patients; thrombocytopenia in 9 (24%) patients; anemia in 7 (19%) patients; vomiting in 3 (8%) patients; dysphagia in 2 (5%) patients, radiation pneumonitis in 2 (5%) patients and fatigue in 3 (8%) patients. No treatment related deaths (neither due to sepsis nor bleeding) were reported in the study.

Conclusion: Concomitant chemoradiotherapy using full doses of pemetrexed and carboplatin for treatment of elderly patients with locally advanced non-squamous NSCLC is a safe and effective regimen and it needs enrolling more patients to confirm the current results.

Table (1): Baseline Patients' Characteristics

Characteristic		Patients	
		No.	%
Age, years	Median	71	
	Range	65-79	
Sex	Male	27	73%
	Female	10	27%
ECOG PS	0	23	62%
	1-2	14	38%
Histopathological type	Adenocarcinoma	30	81%
	Large Cell	7	19%
Stage	IIIA	13	35%
	IIIB	24	65%
Smoking Status	Never smoking	5	14%
	Smoker (current/former)	32	86%

