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Platinum based doublet cross over therapy for advanced stage non small cell lung cancer? A better survival option

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ABSTRACT

Platinum based doublet chemotherapy namely the cisplatin/carboplatin based etoposide or gemcitabine therapy forms the therapy of choice, for patients with advanced non small cell carcinoma of the lung. Here we report two cases where unusual cross over was done from gemcitabine-to cisplatin-doublet chemotherapy resulting in unexpectedly better clinical and radiological response.

Keywords: Non small cell lung cancer, platinum based doublet chemotherapy, cross over therapy.

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Introduction

Lung cancer is the leading cause of cancer related mortality in both men and women throughout the world. In 2007, an estimated 1.5 million new cases of lung cancer were diagnosed globally, accounting for approximately 12% of the global cancer burden¹. The treatment of NSCLC is surgery for early stages, chemotherapy with concurrent radiation for locally advanced cancers, and palliative chemotherapy for metastatic disease². Cisplatin based doublet (Gemcitabine /Etoposide) chemotherapy is the treatment of choice, and, cisplatin plus Gemcitabine doublet having the better toxicity profile³. We are reporting here our experience with two patients in whom we were forced to switch over from Gemcitabine –to -Cisplatin doublet regimen due to interruption of supply of Gemcitabine from our hospital.

Case 1: A 40 -year- old ex-smoker presented with complaints of dry cough, chest pain and hemoptysis

of 3 months duration. Chest X ray PA view revealed homogeneous opacity in left upper and midzone (Figure 1a), and CT Thorax showed attenuated lesion measuring 6.5x5x3 cm in the apico-posterior segment of left upper lobe(Figure 1b).CT guided biopsy of the lesion was done and its histopathology revealed TTF 1 positive adenocarcinoma. Thus the patient was diagnosed to have bronchogenic carcinoma type adeno and the TNM staging was III B T₄ N₂M₀. His Karnofsky performance status score was 60 and ECOG score was 2. He was started on Gemcitabine (1250mg /m²) plus Cisplatin (100mg/m²) regimen. After two cycles we were forced to switch over to cisplatin plus etoposide. Patient then completed four cycles of Cisplatin and etoposide (30 mg/m²). On completion of six cycles there was dramatic radiological (Figure 1c) and clinical response with karnofsky of 90 and ECOG of 0.

Case 2: A 60 –year old smoker and alcoholic patient was admitted in our department with complaints of

hemoptysis of one month duration. His admission chest radiograph revealed prominent left hilum (Figure 2a) and CT Thorax showed nodular lesion in superior segment of left lower lobe (Figure 2b). Bronchoscopy was done and transbronchial lung biopsy from superior segment of left lower lobe revealed squamous cell carcinoma. Thus the patient was diagnosed to have bronchogenic carcinoma type squamous with TNM staging of III A T₂N₂M₀. His Karnofsky performance Status score was 40 and

ECOG score was 3. He was planned concurrent chemo-radiotherapy followed by surgical resection, but he refused both radiotherapy and surgery, and was put on Gemcitabine (1250mg/m²) and Cisplatin (120mg/m²) therapy. Just like our previous patient, after two cycles we were forced to shift over to etoposide (50 mg/m²) from Gemcitabine. On completion of six cycles he also showed good clinical recovery (Figure 2c) with karnofsky of 80 and ECOG of 1.

Figure 1: Initial chest skiagram (a) showing homogeneous nodular opacity in left upper and midzones, admission computed tomography (b) showing rounded soft tissue attenuated lesion measuring 6.5×5×3 cm in the left apico-posterior and postchemotherapy one (c) revealing thick walled cavity with adjacent fibrosis in the same segment.

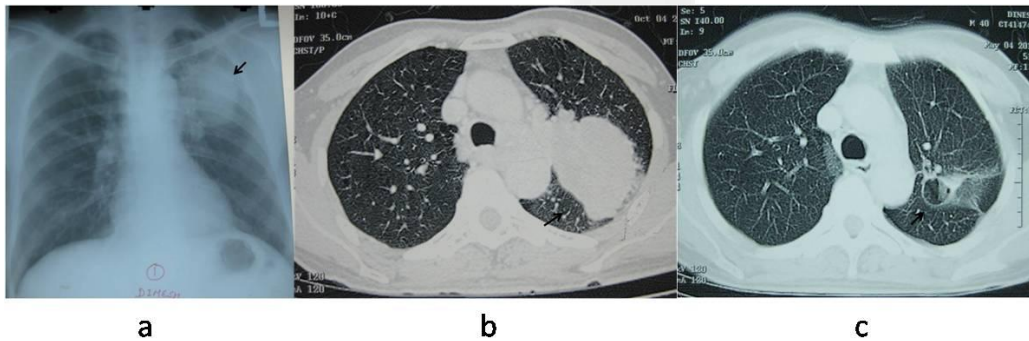
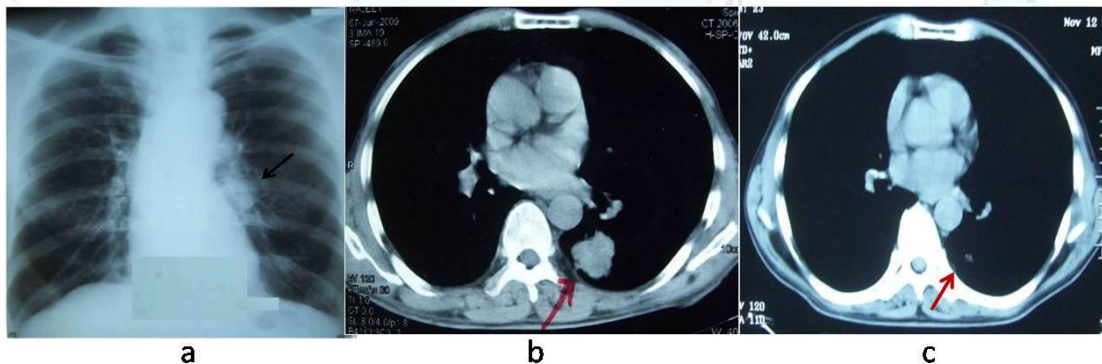


Figure 2: Admission chest x ray (a) showing prominent left hilum (arrow), computed tomography (b) revealing 4.4×4×3 cm nodular lesion in superior segment of left lower lobe (arrow) and post six cycles computed tomography depicting (c) residual lesion.



Discussion

The choice of treatment in a case of lung cancer depends on the type of lung cancer, the size and location of tumor, whether or not the tumour has spread outside the lungs, the patient's age and general health status. Treatment options include radiotherapy, chemotherapy and surgery. Newer treatment modalities include targeted therapy, cryosurgery, laser surgery, photodynamic therapy, electrocautery and internal radiation. Non Small Cell Lung Cancer (NSCLC) with stages I and II are usually treated with surgery. In patients with stages I and II were surgery

can't be done due to poor lung reserves radiation therapy is used. Chemotherapeutic regimens are usually reserved for advanced stages like III and IV or as adjuvant therapy, that is, to be used after surgery or as neoadjuvant therapy, which is treatment before surgery.

Platinum-based chemotherapeutic agent is the standard care of treatment in patients with NSCLC especially in advanced disease (stages III and especially IV)^{4,5}. Combination regimens are usually preferred and this often includes a platinum drug like

cisplatin along with etoposide or newer agents like docetaxel, gemcitabine, pemetrexed or vinorelbine⁵. Even after extensive search in pub med database we were unable to find any literature on gemcitabine-to cisplatin-doublet cross over chemotherapy. But is this just a matter of chance or is it really a method worth following, needs to be evaluated on large scale by further randomised studies, which will be a real boon for the already ailing cancer patient and their families.

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