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MINI-REVIEW ARTICLE

Chemoradiotherapy with daily cisplatin in advanced NSCLC with Comorbid Disorders: With literature review

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Abstract

Background: One of the most common cancer in males was lung cancer and non-small cell variant in worldwide. The main treatment was is surgery and chemotherapy and/or radiotherapy in non-small cell lung cancer (NSCLC). Five-year survival was 15% for all stages of NSCLC. Advanced stage patients of NSCLC were remain without treatment because treatment related high toxicity rates. Therefore low toxic treatments were warranted in advanced stages of NSCLC especially with comorbid disorders. The effect of daily low dose cisplatin concurrently with radiation therapy was determined with evaluating of literature in advanced NSCLC patients with poor performance status.

Keywords: *NSCLC, thorax radiochemotherapy, daily cisplatin*

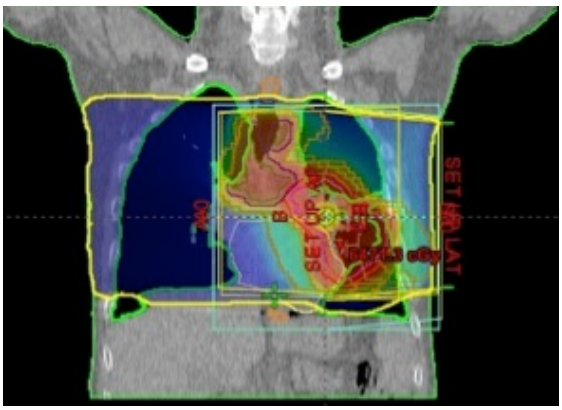
INTRODUCTION

Curative treatment can be used to only 30% of the patients because 70% of patient are in the advanced stages at the time of diagnosis on NSCLC (1). Combine or monodrug chemotherapy regimes provide a 1-3 months benefit on median survival but decrease to quality of life of patients in the advanced stages (2). 5-year survival rates was showed a decline of 31% for patients with serious comorbidity, even in T1 disease.

Vinorelbine, gemcitabine, paclitaxel and docetaxel whose newer generation agents may use for advanced NSCLC treatment (3-5). Paclitaxel or docetaxel plus cisplatin containing regimes are used as standard treatments for advanced NSCLC (6, 7).

Only palliative radiotherapy or supportive treatment can be administered probably advanced stage lung cancer patients with comorbidities because high toxicity and low survival rates (8, 9, 10). The 5-year survival rates in non-small cell lung cancer were 27% and 0-5%, in early stages and stage IIIB respectively even with 60-64 Gy RT (11). For this reason, combination treatments which administered concurrently with RT have now become as standard treatment modalities in Stage IIIB (3) (Figure 1).

Figure 1: Radiation planning of NSCLC



Addition of CT provides a survival benefit of 4-6% in 5-year survival rates. An additional benefit of 2 months in median survival can be obtain ed by the contribution of target specific drugs. In patients with an ECOG performance status of 3, median survival is 4.1 months and grade 3-4 haematological toxicity is above 50% with standard chemotherapy regimens. The response rate to treatment is 14% (12). In NSCLC lung cancer with comorbid disorders, patients with ECOG performance status of 1-2 can be given standard treatment regimens, while those with an ECOG performance status of 3-4 are generally left untreated.

DISCUSSION

Significant costs are consumed shortly before death, because of continued oncological treatment during the terminal stage of disease. Hospital death occurred in 70% of patients who received active oncologic treatment during this period. Multivariate analysis showed that the presence of superior vena cava compression was one of the important predictors of active therapy during the last month of life in patients with non-small cell lung cancer (13, 14). Most patients of advanced non-small cell lung cancer (NSCLC) cases receive supportive treatments with or without other oncologic treatments. Suppertive treatments usually called Best Supportive Care (BSC). The BSC drugs contain nutrition products, intravenous supportive

produsts, narcotic and non-narcotic analgesics, oxygen therapy, corticosteroids and gastrointestinal medications (15).

Cisplatin are known to result in more beneficial outcomes In non-small cell lung cancer patients who receive concurrent chemotherapy with thoracic radiotherapy (3, 12). Daily cisplatin containing CT regimes were utilized in relatively small number of studies before 2016 (16-18). There are some papers reporting that low dose treatments mostly administered as oral chemotherapies or weekly chemotherapies and termed as metronomic chemotherapy can be more efficacious than classical chemotherapies (19).

With these types of treatments, the goal is both to reduce the adverse effects of chemotherapy and sensitize the tumour to treatment increasing the effect by reducing tumour vasculature. Recent years only several studies obtained about daily cisplatin and thoracic RCT in NSCLC (20, 21).

The weekly chemotherapy which the other metronomic chemotherapy schedule has been evaluated with some studies (22). Weekly paclitaxel/docetaxel is an other safe protocol for advanced NSCLC. This schedule advantages are reduce toxicity, enhanced cytotoxicity, increase dose intensity in NSCLC (23-27). The overall response rates were 31.6%-45% has been (28, 29) and grade 3 and grade 4 leukopenia occurred in about 20% for weekly docetaxel (30).

Kiziltan et al reported to complete response was obtained in 20% patients at the primary tumour site with daily cisplatin and thoracic chemoradiotherapy in NSCLC patients. Toxicity rates were very low that Grade I esophagitis was seen 70 percent of patients, and the grade II haematological toxicity rate was 20 %. Median survival time was 7 months despite with poor ECOG performances, which is similar to patient studies of without comorbid disorders in the literature (20). Daily cisplatin and thoracic RT which could be administered for only between 11-17 days. The survival rate of this study is similar to other groups, even without comorbid disorders in comparison to published papers for NSCLC in the literature (20, 3, 12). Better results expect in NSCLC patients without comorbidity. These studies are mostly conducted in patient groups without comorbid disorders and with a maximum ECOG (Eastern Cooperative Oncology Group) performance score of 3, in the literature. Furthermore chemotherapy with daily cisplatin with RT was administered as long as mean 20 days in the published studies (18). these results obtained are quite successful; survival time, low toxicity, high response rates and quality of life of patients are the favourable features. In conclusion, these studies may shed light that daily and low dose treatments might be effective in untreatable lung cancer subjects with comorbid disorders. New studies are warranted with metronomic daily CT using cisplatin, and in wider patient populations having NSCLC with comorbid disorders.

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