Research Article

Prospective comparative study of pemetrexed and carboplatin versus paclitaxel and carboplatin as first-line chemotherapy in adenocarcinoma lung

Tapas Kumar Das[1], Pabitra Das[2], Sunita Das[3], Arpan Jana[4]

[1]Department of Radiotherapy, Nilratan Sarkar Medical College Hospital, Kolkata, West Bengal, India, [2]Department of Radiotherapy, College of Medicine Sagore Dutta Hospital, Kamarhati, West Bengal, India, [3]Department of Physiology, R. G. Kar Medical College Hospital, Kolkata, West Bengal, India, [4]Department of Radiation Oncology, Ruby Cancer Centre, Kolkata, West Bengal, India.

Correspondence to: Pabitra Das, E-mail: dr.das.pabitra@gmail.com

Received: January 04, 2019; **Accepted:** January 28, 2019

ABSTRACT

Background: The worldwide epidemiology of lung cancer is ever changing, and non-squamous non-small-cell lung cancer (NSCLC) in never-smoking women has been gradually increasing. In Indian population, adenocarcinoma lung was more common in never smoker persons. Approximately 70–80% of lung cancer cases are NSCLC. Most of NSCLC patients present with advanced disease or brain metastasis. The prognosis of patients with advanced NSCLC is generally considered poor, with a median survival of 9–11 months and a 2-year survival around 20–30%. There are no enough data in Eastern India regarding disease response, treatment-related toxicity, overall survival, and progression-free survival in advanced adenocarcinoma lung treated with chemotherapy and radiotherapy. **Objectives:** The objectives of this study were to compare disease response, toxicity, overall survival, and progression-free survival in advanced adenocarcinoma lung treated as first line with pemetrexed/carboplatin versus paclitaxel/carboplatin. **Materials and Methods:** A total of 123 patients were placed in Group A and another 117 in Group B (stage III disease). Group A patients were treated with pemetrexed 500 mg/m^2 and carboplatin area under the concentration (AUC) 6 every 3 week. Group B patients were treated with carboplatin at dose AUC 6 and paclitaxel 200 mg/m^2 administered 3 weekly. Dose of radiation was planned 60 Gy in 30# for 6 weeks in conventional fractionation schedule 3 weeks after completion of chemotherapy. **Results:** Hematological toxicities were Grade 3 anemia 27 (22%) in Group A and 29 (24.8%) Group B, Grade 3 neutropenia 34 (27.6%) in Group A and 33 (28.2%) in Group B, and Grade 4 neutropenia 5 (4%) in Group A and 4 (3.4%) in Group B. Grade 3 sensory neuropathy was seen in Group B 17 (14.5%). There was no Grade 3 or Grade 4 sensory neuropathy in Group A. Grade 3 fatigue was seen in Group B 19 (16.2%). Grade 3 diarrhea was seen 9 (7.3%) in Group A and 8 (6.8%) in Group B. Overall response rate was 63 (51.2%) in Group A and 43 (36.8%) in Group B. The complete response of disease was 19 (15.4%) in Group A and 6 (5.1%) in Group B. The partial response was 44 (34.6%) in Group A and 37 (31.6%) in Group B. Stable disease was 41 (33.3%) in Group A and 51 (43.6%) in Group B. The progressive disease was 19 (15.4%) in Group A and 23 (19.6%) in Group B. Median overall survival was 14.6 months in Group A and 14.4 months in Group B. **Conclusion:** In our study, pemetrexed/carboplatin provides better efficacy and tolerance, a reduced need for supportive therapies, and more convenient administration than paclitaxel/carboplatin for the first-line treatment of patients with advanced adenocarcinoma lung.

KEY WORDS: Adenocarcinoma; Chemotherapy; Overall response

Access this article online	
Website: http://www.ijmsph.com	Quick Response code
DOI: 10.5455/ijmsph.2019.0102028012019	

INTRODUCTION

Worldwide, nowadays, lung cancer is the common cause of death in both men and women.[1] Approximately 70–80% of lung cancer cases are non-small-cell lung cancer (NSCLC). Most of NSCLC patients present with advanced disease or brain metastasis.[2] The prognosis of patients with advanced

NSCLC is generally considered poor, with a median survival of 9–11 months and a 2-year survival around 20–30%.[3,4] In our clinical settings, commonly found histopathology is adenocarcinoma and squamous cell carcinoma.

25–45% of patients develop brain metastases during natural course of disease and treatment.[5-7] With the advancement of newer chemotherapy drugs, median survival is increased nowadays.[8] The median survival of patients with untreated advanced disease is reported to be 4–6 months.[7] In advanced disease, patients are placed for radical treatment with newer chemotherapy molecule and local radiation.[9,10]

The worldwide epidemiology of lung cancer is ever changing, and non-squamous NSCLC in never-smoking women has been gradually increasing.[11] In Indian population, adenocarcinoma (Adenoca) was more common in never smoker persons.

Mostly poor patients come to our government institute for treatment. We treat these patients in our hospital available drugs free of cost.

We hypothesized that after careful treatment with commonly practiced standard chemotherapy and radiation, patients of NSCLC may develop metastasis to brain and other organ during course of treatment or follow-up phase. Some clinical trial is on process for adenocarcinoma lung with some advanced immunohistochemical study (EGFR, ALK, MET, ROS-1, and KRAS).[12] Many newer costly targeted therapy (tyrosine kinase inhibitor) has been invented which may be helpful to improve the survival of these patients.

There are no enough data in Eastern India regarding disease response, treatment-related toxicity, overall survival, and progression-free survival in advanced adenocarcinoma lung treated with chemotherapy and radiotherapy.

The current study targets to compare the efficacy of two chemotherapy regimen in respect of overall survival and progression-free survival in the present treatment scenario.

MATERIALS AND METHODS

The study was done with newly diagnosed Stage III NSCLC patients in the Radiotherapy Department on NRS Medical College and Hospital, Kolkata, from January 2014 to December 2017. The following criteria were used for study enrollment: Patients who were initially diagnosed with Stage III lung adenocarcinoma by histopathology and patients without other comorbidities. Patients staging was done with whole-body imaging studies including 18F-fluorodeoxyglucose positron emission tomography/computed tomography (CT) and brain imaging (magnetic resonance imaging). Around 1227 lung cancer cases of different age group were enrolled in our department in above-mentioned duration. Among them, we selected 246 patients having age between 30 and 70 years and who fulfilled above-mentioned criteria. Of 246 patients, 123 patients were placed in Group A and another 123 was in Group B. Three patients after the first cycle of chemotherapy and three patients after the second cycle of Group B did not turn up for treatment. Hence, finally, 117 patients in Group B were studied.

Group A

Patients were treated with pemetrexed 500 mg/m^2 intravenously administered over 15 min on day 1 of a 21-day cycle followed by carboplatin area under the concentration (AUC) 6 with 1 h infusion after pemetrexed administration. Dexamethasone 4 mg was taken orally twice daily on the day before, the day of, and the day after each dose of pemetrexed. Folic acid supplementation 500 μg was taken orally daily beginning 1 week before the first dose of pemetrexed and continued until 3 weeks after study therapy discontinuation. Vitamin B12 1000 μgm was intramuscularly injected, starting 1 week before day 1 of cycle 1 and repeated every 9 weeks until the study discontinuation.

Group B

Patients were treated with carboplatin at dose AUC 6 and paclitaxel 200 mg/m^2 administered 3 weekly. Paclitaxel 200 mg/m^2, diluted in 500 mL of normal saline, was given as a 3-h intravenous (IV) infusion. Premedications for paclitaxel included dexamethasone (8 mg oral doses at 24 h and 12 h and 16 mg 1 h before the paclitaxel), diphenhydramine (50 mg IV), and a histamine receptor-2 antagonist (ranitidine 50 mg IV). After the paclitaxel infusion, carboplatin, dosed to achieve an AUC versus time curve of 6 mg/mL × min, dissolved in 100 mL of 5% dextrose or 0.9% saline, was administered as a 60-min IV infusion. Close monitoring was done during chemotherapy to detect any adverse reaction.

After 3 weeks of the completion of 6 cycles of the chemotherapy, patients of both arms were placed for external radiation with cobalt 60 teletherapy with the help of CT simulator TPS facility. Dose of radiation was planned 60 Gy in 30# for 6 weeks in conventional fractionation schedule. Response assessments were done after 3 cycles and 6 cycles of chemotherapy using RECIST criteria (1.1).

The body weight and body surface area of each patient was calculated before each cycle of chemotherapy. Hematology, blood chemistry, and calculated creatinine clearance were determined within 4 days before study drug administration for each cycle. Toxicity was assessed before each cycle using version 4.0 of the National Cancer Institute Common Toxicity Criteria scale (CTCAE v4.0). Follow-up schedule was at 4 weeks following completion of treatment, then at 2 months interval up to 2 years. Clinical examination was done at each follow-up. The aim of our study was to compare in disease

response, toxicity, overall response, and progression-free survival in both groups.

RESULTS

Initially, 246 patients were enrolled in the study (123 in Group A and 123 in Group B). Of 123 patients in Group B, three patients after the first cycle and three patients after the second cycle did not turn up. Finally, 117 patients of Group B continued their treatment. The baseline patient's demographics and disease characteristics are shown in Table 1. The median age of the patients in both groups was 60 years (range 30–70 years). Male patients in Group A were 84 (68.3%) and Group B were 82 (70%). Female patients were 39 (31.7%) and 35 (30%) in Group A and Group B, respectively. Most of the patients in both the groups had Eastern Cooperative Oncology Group (ECOG) performance score 1, in Group A 78 (63.4%) and Group B 73 (62.4%). Most of the patients were non-smoker in both the groups, 65 (52.9%) in Group A and 62 (53%) in Group B. Most of the patients had Stage IIIA (AJCC 7th edition) 68 (55.3%) in Group A and 63 (53.8%) in Group B. The treatment-related toxicities are shown in Table 2. Hematological toxicities were Grade 3 anemia 27 (22%) in Group A and 29 (24.8%) Group B, Grade 3 neutropenia 34 (27.6%) in Group A and 33 (28.2%) in Group B, and Grade 4 neutropenia 5 (4%) in Group A and 4 (3.4%) in Group B. Grade 3 thrombocytopenia was seen 7 (5.7%) in Group A and 6 (5.1%) in Group B. Grade 3 sensory neuropathy was seen in Group B 17 (14.5%). There was no Grade 3 or Grade 4 sensory neuropathy in Group A. Grade 3 fatigue was seen in Group B 19 (16.2%). There was no Grade 3 or Grade 4 fatigue in Group A. Grade 3 diarrhea was seen 9 (7.3%) in Group A and 8 (6.8%) in Group B. Grade 3 stomatitis was seen 5 (4%) in Group A and 7 (6%) in Group B. Grade 3 vomiting was seen 9 (7.3%) in Group A and 8 (6.8%) in Group B. Grade 3 infection in lung without neutropenia was 5 (4%) in Group A and 7 (5.98%) in Group B. Grade 3 infection in lung with febrile neutropenia was 3 (2.4%) in Group A and 5 (4.3%) in Group B.

Table 1: Baseline patient demographics and disease characteristics

Characteristics	Group A (%)	Group B (%)
Number patients treated	123	117
Median age (range), year	60 (30–70)	60 (30–70)
Gender		
Male	84 (68.3)	82 (70)
Female	39 (31.7)	35 (30)
ECOG PS*		
0	28 (22.8)	25 (21.3)
1	78 (63.4)	73 (62.4)
2	17 (13.8)	19 (16.2)
Smoking status		
Smoker	58 (47.1)	55 (47)
Non-Smoker	65 (52.9)	62 (53)
AJCC (7thedition) staging		
Stage III A	68 (55.3)	63 (53.8)
Stage III B	55 (44.7)	54 (46.1)

ECOG PS: Eastern Cooperative Oncology Group performance status

The best overall response was shown in Table 3. Overall response rate was 63 (51.2%) in Group A and 43 (36.8%) in Group B. The complete response of disease was 19 (15.4%) in Group A and 6 (5.1%) in Group B. The partial response was 44 (34.6%) in Group A and 37 (31.6%) in Group B. Stable disease was 41 (33.3%) in Group A and 51 (43.6%) in Group B. The progressive disease was 19 (15.4%) in

Table 2: Selected NCI-CTC Grade 3 and 4 toxicities

Toxicity	Group A (*n*=123) (Pemetrexeda)		Group B (*n*=117) (Paclitaxel)	
	Grade 3	Grade 4	Grade 3	Grade 3
Hematologic, *n* (%)				
Neutropenia	34 (27.6)	5 (4)	33 (28.2)	4 (3.4)
Thrombocytopenia	7 (5.7)	0	6 (5.1)	0
Anemia	27 (22)	0	29 (24.8)	0
Non-hematologic, *n* (%)				
Fatigue	0	0	19 (16.2)	0
Stomatitis	5 (4)	0	7 (6)	0
Vomiting	9 (7.3)	0	8 (6.8)	0
Neuropathy (sensory)	0	0	17 (14.5)	0
Diarrhea	9 (7.3)	0	8 (6.8)	0
Infection (lung)				
Without neutropenia	5 (4)	0	7 (5.98)	0
Febrile neutropenia	3 (2.4)	0	5 (4.3)	0

Worst toxicity by patient and numbers of patients in designated treatment groups. Abbreviation: NCI-CTC: National Cancer Institute Common Toxicity Criteria, version 4

Table 3: Best overall response

Tumor response	Group A (*n*=123) number patients (%)	Group B arm (*n*=117), number. patients (%)
Overall response	63 (51.2)	43 (36.8)
Complete response	19 (15.4)	6 (5.1)
Partial response	44 (34.6)	37 (31.6)
Stable disease	41 (33.3)	51 (43.6)
Progressive disease	19 (15.4)	23 (19.6)

Group A and 23 (19.6%) in Group B. Median overall survival was 14.6 months in Group A and 14.4 months in Group B. The progression-free survival was 6.4 months in Group A and 5.9 months in Group B.

DISCUSSION

The worldwide epidemiology of lung cancer is ever changing, and non-squamous NSCLC in never-smoking women has been gradually increasing.[10,11] In Indian population, adenocarcinoma (Adenoca) was more common in never smoker persons.[12] Approximately 70–80% of lung cancer cases are NSCLC. Most of NSCLC patients present with advanced disease or brain metastasis.[2] The prognosis of patients with advanced NSCLC is generally considered poor, with a median survival of 9–11 months and a 2-year survival around 20–30%.[3,4]

In our study, median age of the patients in both groups was 60 years (range 30–70 years). Male patients in Group A were 84 (68.3%) and Group B were 82 (70%). Female patients were 39 (31.7%) and 35 (30%) in Group A and Group B, respectively. Most of the patients in both the groups had ECOG performance score 1, in Group A 78 (63.4%) and Group B 73 (62.4%). Most of the patients were non-smoker in both the groups, 65 (52.9%) in Group A and 62 (53%) in Group B. Most of the patients had Stage IIIA (AJCC 7th edition) 68 (55.3%) in Group A and 63 (53.8%) in Group B. Hematological toxicities were Grade 3 anemia 27 (22%) in Group A and 29 (24.8%) Group B, Grade 3 neutropenia 34 (27.6%) in Group A and 33 (28.2%) in Group B, and Grade 4 neutropenia 5 (4%) in Group A and 4 (3.4%) in Group B. Grade 3 thrombocytopenia was seen 7 (5.7%) in Group A and 6 (5.1%) in Group B. Grade 3 sensory neuropathy was seen in Group B 17 (14.5%). There was no Grade 3 or Grade 4 sensory neuropathy in Group A. Grade 3 fatigue was seen 19 (16.2%) in Group B. There was no Grade 3 or Grade 4 fatigue in Group A. Grade 3 diarrhea was seen 9 (7.3%) in Group A and 8 (6.8%) in Group B. Grade 3 stomatitis was seen 5 (4%) in Group A and 7 (6%) in Group B. Grade 3 vomiting was seen 9 (7.3%) in Group A and 8 (6.8%) in Group B. Grade 3 infection in lung without neutropenia was 5 (4%) in Group A and 7 (5.98%) in Group B. Grade 3 infection in lung with febrile neutropenia was 3 (2.4%) in Group A and 5 (4.3%) in Group B. Overall response rate was 63 (51.2%) in Group A and 43 (36.8%) in Group B. The complete response of disease was 19 (15.4%) in Group A and 6 (5.1%) in Group B. The partial response was 44 (34.6%) in Group A and 37 (31.6%) in Group B. Stable disease was 41 (33.3%) in Group A and 51 (43.6%) in Group B. The progressive disease was 19 (15.4%) in Group A and 23 (19.6%) in Group B.

Scagliotti *et al*.[13] showed in their study that disease response in adenocarcinoma was better in pemetrexed/cisplatin than gemcitabine/cisplatin group and median overall survival was 12.6 months in pemetrexed/cisplatin group and 10.9 months in gemcitabine/cisplatin group. They demonstrated Grade 3 or Grade 4 toxicity of drugs in their study that anemia was 5.6% in pemetrexed/cisplatin group and 9.9% in gemcitabine/cisplatin group, neutropenia was 15.1% in pemetrexed/cisplatin group and 26.7% in gemcitabine/cisplatin group, thrombocytopenia was 4% in pemetrexed/cisplatin group and 12.7% in gemcitabine/cisplatin group, vomiting was 6.1% in pemetrexed/cisplatin group and 6.1% in gemcitabine/cisplatin group, and fatigue was seen 6.7% in pemetrexed/cisplatin group and 4.9% in gemcitabine/cisplatin group.

Zinner *et al*., in PRONOUNCE trial,[14] the median age of the patients was 65.8 years in pemetrexed/carboplatin group and 65.4 years in paclitaxel/carboplatin/bevacizumab group, female patients were 42.3% in pemetrexed/carboplatin group and 41.9% in paclitaxel/carboplatin/bevacizumab group, and adenocarcinoma patients were 83.5% in pemetrexed/carboplatin and 76.5% in paclitaxel/carboplatin/bevacizumab group. In our study, median age of the patients in both groups was 60 years (range 30–70 years). Male patients in Group A were 84 (68.3%) and Group B were 82 (70%). Female patients were 39 (31.7%) and 35 (30%) in Group A and Group B, respectively, most of the patients had Stage IIIA (AJCC 7th edition) 68 (55.3%) in Group A and 63 (53.8%) in Group B.

Rodrigues-Pereira *et al*.[15] showed in their study that the tumor response rate was 34% in pemetrexed/carboplatin group and 22.9% in docetaxel/carboplatin group, median overall survival was 14.9 months in pemetrexed/carboplatin group and 14.7 months in docetaxel/carboplatin group, and median progression-free survival was 5.8 months in pemetrexed/carboplatin group and 6 months in docetaxel/carboplatin group.

Patel *et al*.[16] demonstrated median overall survival was 12.6 months in pemetrexed/carboplatin/bevacizumab group and 13.4 months in paclitaxel/carboplatin/bevacizumab group and median progression-free survival was 6 months in pemetrexed/carboplatin/bevacizumab and 5.6 months in paclitaxel/carboplatin/bevacizumab group.

Spigel *et al*. suggested that platinum-based regimens were associated with a better time to progression that was 10.2 versus 4.7 months without platinum and OS (14.8 vs. 7.5 months) [Spigel *et al*.].[17]

Pemetrexed has been studied in combination with anti-EGFR-targeted therapies. Cetuximab showed an ORR of 38.5%, a PFS of 5.8 months, and a 1-year survival rate of 45% in a single-arm Phase II study [Schmid-Bindert *et al*.].[18]

In our study, the overall response rate was 63 (51.2%) in Group A and 43 (36.8%) in Group B. The complete response of disease was 19 (15.4%) in Group A and 6 (5.1%) in Group B. The partial response was 44 (34.6%) in Group A and 37 (31.6%) in Group B. Stable disease was 41 (33.3%) in Group A and 51 (43.6%) in Group B. The progressive disease was 19 (15.4%) in Group A and 23 (19.6%) in Group B. Median overall survival was 14.6 months in Group A and 14.4 months in Group B. The progression-free survival was 6.4 months in Group A and 5.9 months in Group B.

CONCLUSION

In our study, pemetrexed/carboplatin provides better efficacy and tolerance, a reduced need for supportive therapies, and more convenient administration than paclitaxel/carboplatin for the first-line treatment of patients with advanced adenocarcinoma lung.

Future studies with newer chemotherapy molecules may highlight better treatment outcome.

REFERENCES

1. American Cancer Society. Key Statistics of Lung Cancer, Last Medical Review on 9th February, 2016.
2. Buccheri G, Ferrigno D. Lung cancer: Clinical presentation and specialist referral time. Eur Respir J 2004;24:898-904.
3. Fenchel K, Sellmann L, Dempke WC. Overall survival in non-small cell lung cancer-what is clinically meaningful? Transl Lung Cancer Res 2016;5:115-9.
4. Wynes MW. Increased overall survival for advanced stage NSCLC patients is associated with availability of less toxic chemotherapy. Int Assoc Study Lung Cancer 2014;720:325-2945.
5. Villano JL, Durbin EB, Normandeau C, Thakkar JP, Moirangthem V, Davis FG, *et al.* Incidence of brain metastasis at initial presentation of lung cancer. Neuro Oncol 2015;17:122-8.
6. Wang J, Mahasittiwat P, Wong KK, Quint LE, Kong FM. Natural growth and disease progression of non-small cell lung cancer evaluated with 18F-fluorodeoxyglucose PET/CT. Lung Cancer 2012;78:51-6.
7. Abbasi S, Badheeb A. Prognostic factors in advanced non-small-cell lung cancer patients: Patient characteristics and type of chemotherapy. Lung Cancer Int 2011;2011:152125.
8. NSCLC Meta-Analyses Collaborative Group. Chemotherapy in addition to supportive care improves survival in advanced non-small-cell lung cancer: A systematic review and meta-analysis of individual patient data from 16 randomized controlled trials. J Clin Oncol 2008;26:4617-25.
9. Su S, Hu Y, Ouyang W, Ma Z, Lu B, Li Q, *et al.* The survival outcomes and prognosis of stage IV non-small-cell lung cancer treated with thoracic three-dimensional radiotherapy combined with chemotherapy. Radiat Oncol 2014;9:290.
10. Kelly K, Crowley J, Bunn PA Jr. Presant CA, Grevstad PK, Moinpour CM, *et al.* Randomized phase III trial of paclitaxel plus carboplatin versus vinorelbine plus cisplatin in the treatment of patients with advanced non small-cell lung cancer: A Southwest oncology group trial. J Clin Oncol 2001;19:3210-8.
11. Rudin CM, Avila-Tang E, Harris CC, Herman JG, Hirsch FR, Pao W, *et al.* Lung cancer in never smokers: Molecular profiles and therapeutic implications. Clin Cancer Res 2009;15:5646-61.
12. Korpanty GJ, Graham DM, Vincent MD, Leighl NB. Biomarkers that currently affect clinical practice in lung cancer: EGFR, ALK, MET, ROS-1, and KRAS. Front Oncol 2014;4:204.
13. Scagliotti GV, Parikh P, von Pawel J, Biesma B, Vansteenkiste J, Manegold C, *et al.* Phase III study comparing cisplatin plus gemcitabine with cisplatin plus pemetrexed in chemotherapy-naive patients with advanced-stage non-small-cell lung cancer. J Clin Oncol 2008;26:3543-51.
14. Zinner R, Ross HJ, Weaver R, Govindan R, Holden VR, Chowhan NM, *et al*. Randomized, open-label, phase III study of pemetrexed plus carboplatin (PemC) followed by maintenance pemetrexedversus paclitaxel/carboplatin/bevacizumab(PCB) followed by maintenance bevacizumab in patients with advanced nonsquamous (NS) nonsmallcell lung cancer (NSCLC). J Clin Oncol 2013;31 suppl: LBA8003a.
15. Rodrigues-Pereira J, Kim JH, Magallanes M, Lee DH, Wang J, Ganju V, *et al.* A randomized phase 3 trial comparing pemetrexed/carboplatin and docetaxel/carboplatin as first-line treatment for advanced, nonsquamous non-small cell lung cancer. J Thorac Oncol 2011;6:1907-14.
16. Patel JD, Socinski MA, Garon EB, Reynolds CH, Spigel DR, Olsen MR, *et al.* PointBreak: A randomized phase III study of pemetrexed plus carboplatin and bevacizumab followed by maintenance pemetrexed and bevacizumab versus paclitaxel plus carboplatin and bevacizumab followed by maintenance bevacizumab in patients with stage IIIB or IV nonsquamous non-small-cell lung cancer. J Clin Oncol 2013;31:4349-57.
17. Spigel DR, Hainsworth JD, Shipley DL, Ervin TJ, Kohler PC, Lubiner ET, *et al.* A randomized phase II trial of pemetrexed/gemcitabine/bevacizumab or pemetrexed/carboplatin/bevacizumab in the first-line treatment of elderly patients with advanced non-small cell lung cancer. J Thorac Oncol 2012;7:196-202.
18. Schmid-Bindert G, Gebbia V, Mayer F, Arriola E, Márquez-Medina D, Syrigos K, *et al.* Phase II study of pemetrexed and cisplatin plus cetuximab followed by pemetrexed and cetuximab maintenance therapy in patients with advanced nonsquamous non-small cell lung cancer. Lung Cancer 2013;81:428-34.

How to cite this article: Das TK, Das P, Das S, Jana A. Prospective comparative study of pemetrexed and carboplatin versus paclitaxel and carboplatin as first-line chemotherapy in Adenocarcinoma lung. Int J Med Sci Public Health 2019;8(3):243-247.

Source of Support: Nil, **Conflict of Interest:** None declared.