

Lung Carcinosarcoma Report of One Case Treated With Immunotherapy with Review

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Abstract

Pulmonary Carcinosarcoma is an uncommon malignant biphasic tumor that accounts for less than 1% of all lung cancers. It is defined by coexisting histologic elements of carcinomatous and sarcomatous components.

We report a case of advanced stage pulmonary carcinosarcoma in a 83-year-old patient, treated with immunotherapy with good response lasted for more than one year.

Keywords: carcinosarcoma; lung; histology

Introduction

Pulmonary carcinosarcoma is a rare and highly malignant lung neoplasm characterized by a biphasic histopathological pattern consisting of both epithelial and sarcomatous components (1-6). It usually affects men, generally heavy smokers, between the fifth and eighth decades of life (2, 3). Has 11 similar clinical manifestations to any other type of lung cancer, with worse outcome and poor response to Medical treatment. The response to Chemotherapy or radiotherapy is minimal in his kind of tumour. Surgical excision is the treatment of choice in limited (resectable) lesions.

Overall prognosis is poor with a median survival time of 9 to 12 months after potentially curative surgical resection.

Case report

A 83 years old lady, presented initially weight loss, anorexia and shortness of breath in August 2018.

A staging CT Chest, abdomen and pelvis (fig1) – 5.4 x 4.8 x 4.3cm right upper lobe mass with occlusion of the posterior and apical segmental bronchi. The mass extends through the superior aspect of the right oblique fissure to directly involve the apical segment of right lower lobe. Indeterminate Pleural based 5mm nodule in the posterior right lower lobe. Enlarged ipsilateral hilar and precarinal lymph nodes. Multiple hepatic lesions, likely cysts. Haemangioma T10 vertebral body. TNM staging, T3/T4 N2 M

Bronchoscopic biopsy done, Histology confirmed the diagnosis of carcinosarcoma; Immunohistochemistry positive for EA1/3 and MMF116. Also positive for P40 CK5/6 and TTF1, suggestive of squamous and also possible glandular differentiation. Napsin-A, Desmin, BCL2, EMA, CD34 and S100 are negative (overall, features are those of a carcinosarcoma).

Lung MDT discussion of the recent CT and histology were, final TNM staging T3/4 N2 M0. PDL1 testing has been requested through the MDT. The outcome of the MDT is to refer the patient to be referred to medical oncology team to consider palliative systemic anticancer treatment.



PDL1 testing tumour tissue, this surprisingly came back positive in 90-100% of the cells and this indicates that she is going to respond to immunotherapy in light of this strong positivity

Medical History:

TIA August 2018, hypertension,

Medication History:

Bisoprolol 1.25mg once daily, Dabigatran 110mg once daily, Felodipine 5mg once daily, Furosemide 20mg once daily, Lansoprazole 15mg once daily.

Social History:

Widowed, has 3 children, ex-smoker since 1979 and she drinks alcohol socially.

Family History:

Father had lung cancer aged 72, sister had lung cancer aged 59

Examination:

On clinical examination she looks fairly well, height 161cm, weight 60.4kg, performance status 0. General and systemic examination unremarkable.

After a long discussion with her regarding Pembrolizumab immunotherapy; benefits and likely toxicities. We have looked at her quality of life with having treatment and the increased survival benefit that some patients would have if they respond to chemotherapy. After discussion she has elected to commence treatment.

CT brain prior to immunotherapy, as per guide lines, was normal.

Immunotherapy started on 14.12.18 and I have booked her for pre-treatment education on 12.12.18.

CT after 4 cycles revealed partial response in the size of the right upper lobe mass and also the size of right hilar and pre-carinal lymph nodes, they were both delighted with his news and our plan is to continue with the same treatment.

Another restaging scan done after 4 more cycles confirmed further partial response with reduction of the lung cancer primary.

CT scan after 3 more months of treatment showed stable disease, therefore we decided to resume her Pembrolizumab treatment.

Last scan was on 11/2019, showed stable disease, she is due for cycle 16 of immunotherapy as she is tolerating the treatment very well.

Except for subclinical hyperthyroidism (TSH 0.1, T4 27), which did not need any medical interference.

Discussion:

Carcinosarcoma is a malignant tumor that consists of a mixture of Non-Small Cell Lung Cancer (NSCLC) and sarcoma-containing heterologous elements (eg, rhabdomyosarcoma, chondrosarcoma, osteosarcoma).

According to the 2004 WHO classification of lung tumors, carcinosarcomas are defined as tumors consisting of an admixture of malignant epithelial and mesenchymal elements. It is included in a group of poorly differentiated non-small cell lung carcinomas that contain a component of sarcomatoid differentiation, so called sarcomatoid carcinoma [2, 3, 5, 6].

Pulmonary carcinosarcomas account for less than 1% (0.2-0.3%) of all primary pulmonary neoplasms [1-4, 6].

The average age of diagnosis is 60 years with men to women ratio of 4/1. More than 90% of the patients have a history of heavy smoking (3). They have also been described with asbestosis [2, 6].

The carcinomatous component is more often squamous cell carcinoma (69%), followed by adenocarcinoma (20%) and large cell carcinoma (11%). A small cell carcinoma component has been only described in two cases, Tsubota et al. and by Huwer H et al. [2].

Surgical resection treatment is the most important part of therapy in early stages [7].

However, as in our case, the advanced stages can be offered palliative treatment with chemotherapy.

Doxorubicin, adriamycin, ifosfamide and dacarbazine, are known to be effective. If distant metastases occur, a combination with chemotherapy is indicated. The overall response rate after systemic treatment of advanced tumors is estimated to be 40% in soft tissue sarcomas [8].

Due to rarity of cases diagnosed with primary carcinosarcoma of lung origin, no enough data supporting the use of immunotherapy in combination with chemotherapy or alone in high PDL-1 score tumours [1].

Our case showed a very good response to immunotherapy for a long period of time, with a very good tolerance, only she needed a close monitoring of thyroid function test as it showed some biochemical derangement with no clinical manifestations.

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