

# A Dual-Cancer Patient with Disease-Free Survival for 63 Months and Over 70 Cycles of Alimta: A Case Report

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## ABSTRACT

Of all malignant tumors, lung cancer has the highest mortality rate. Here, a rare case of a dual-cancer patient with stage IVA non-Hodgkin's lymphoma and stage IIA lung adenocarcinoma has been reported. The patient received more than 70 cycles of Alimta without any adverse reactions caused by chemotherapy, and his disease-free survival reached 63 months.

**Keywords:** Non-Hodgkin's Lymphoma, Lung Adenocarcinoma, Disease-Free Survival, Alimta

## Introduction

Follicular lymphoma is the second-most common type of non-Hodgkin's lymphoma (NHL)[1]. Follicular lymphoma has a good prognosis, with a 10-year overall survival of 80% (Freedman and Jacobsen, 2020). Although lung cancer is the second-most common cancer in the world, its mortality rate is the highest. In China, lung cancer has both the highest incidence rate and the highest mortality rate (Sung *et al.*, 2021). In cancer patients, disease-free survival (DFS) is defined as the time from the date of computed tomography (CT) examination until either the date of relapse (Zuo *et al.*, 2019). Here a case of a dual-cancer patient with stage IVA NHL and stage IIA lung adenocarcinoma who received more than 70 cycles of Alimta and reached 63 months of DFS has been reported. The patient did not have any adverse reactions caused by chemotherapy including anemia.

## Case Presentation

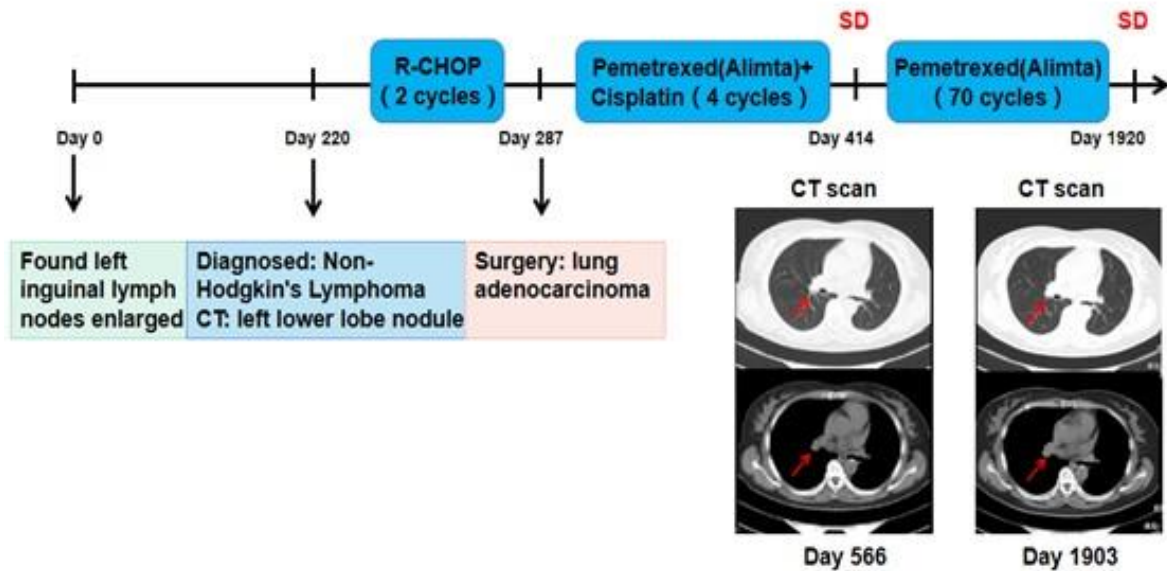
This is the case of a 49-year-old Chinese woman with no smoking history who was found to have an enlarged left inguinal lymph node in April 2015. He was diagnosed with stage IVA NHL (Non-Hodgkin's lymphoma) in November 2015 (Fig. 1). Immunohistochemistry result showed CD20 diffuse (+), CD3 small (+), CD10 germinal center and individual cells between follicles (+), Bcl-6 germinal center and

interfollicular cells (+), Bcl-2 germinal center cells (+), CD38 interfollicular cells (+), while CD21 shows FDC network, Ki-67 germinal center cells about 20%, and Ventana ALK (+). In November 2015, the patient received two cycles of R-CHOP chemotherapy. Chest CT revealed that the anterior basal segment of the left lung had a slightly elevated metabolism with a nodule sign of approximately  $2.4 \times 1.8 \times 1.6$  cm in size and the left hilar metabolism increased lymph nodes. Because lung disease cannot exclude primary or lymphoma involvement, left lower lobe resection and mediastinal lymph node dissection under general anesthesia were performed on January, 2016. The postoperative pathological results indicated that the left lower lung nodule was an invasive lung adenocarcinoma, invaded the small bronchial wall, and did not involve the lung membrane. No cancer was found in the bronchus stump, but the cancer had metastasized to the hilar lymph nodes. Immunohistochemistry result showed AE1/AE3(+), ALK-D5F3(-), CK20(-), CK7(-), CgA(-), GATA3(-), Ki-67(index 5%), PAX-8(-), Syn(-), THY(-), and TTF-1(+). No gene mutations were detected by epidermal growth factor receptor examination.

On February, 2016, the patient received four cycles of pemetrexed (Alimta, 900 mg, day 1) combined with cisplatin (120 mg, day 1) systemic chemotherapy. Subsequently, the patient was treated with pemetrexed (Alimta, 900 mg, day 1) alone as maintenance therapy. To date, the patient has received 70 cycles of Alimta monotherapy. The patient did not have any adverse reactions, including anemia or bone marrow suppression. The patient did not receive any treatment for lymphoma. The results of the last systemic examination on July, 2020, showed no signs of tumor recurrence or metastasis. At the time of writing of this article, the patient's DFS had reached 63 months.

## Discussion

A rare case of a patient diagnosed with stage IVA NHL and stage IIA lung adenocarcinoma with extended DFS has been reported. In a study conducted in China, the median DFS of 48 patients with non-squamous non-small cell lung cancer who met the criteria for stage II pathology was 38.0 months, of which the longest DFS was 47.9 months (Zhang *et al.*, 2014). Surprisingly, the DFS of the patient exceeded 63 months at the time of this writing. Moreover, he did not have any adverse reactions caused by chemotherapy including anemia and bone marrow suppression. This patient did not receive subsequent treatment for lymphoma but did not find any signs of recurrence and metastasis. Pemetrexed is considered to have a certain control effect on ALK+ NHL patients. Moreover, reports were found showing that pemetrexed has good activity and tolerability in patients with central nervous system lymphoma (Dietrich *et al.*, 2020). To our knowledge, this is the first case report of a patient with stage IVA NHL and stage IIA lung adenocarcinoma with a long DFS period.



**Figure 1:** The timeline of the clinical course of the patient from diagnosis until last follow-up with radiographic images.

## Conclusions

A dual-cancer patient with stage NHL and lung adenocarcinoma who received more than 70 cycles of Alimta and reached 63 months of DFS.

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