

# The Importance of Nutrition in Advanced Lung Cancer Patient: A Case Report

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## CASE REPORT

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## ABSTRACT

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Lung cancer is an important public health problem and the most common cause of cancer all over the world. Despite recently developed diagnostic tools, lung cancer is often diagnosed at an advanced stage and/or with distant metastasis. The most frequent distant organ metastases sites in lung cancer are bone, brain, liver, and surrenal. Patients with advanced stage lung cancer experience loss of appetite and weight during their clinical history and frequently receive chemotherapy. Supporting the nutrition of the patients is important for the general condition and continuity of treatment cures. Our case is presented to emphasize the importance of this issue and to create awareness.

**Key Words:** Lung cancer, chemotherapy, dyspnoea, cachexia, malnutrition.

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## INTRODUCTION

Lung cancer is among the most mortal diseases among both sexes in the World. [1] The most common

causes of this cancer include both active and passive smoking, as well as poisoning with heavy metals (cadmium, lead, nickel, arsenic), asbestos and other carcinogenic chemical substances, as well as air pollution. [2,3] Lung treatment is based on tumour resection, chemotherapy and radiotherapy. The patients, especially elderly patients, experience symptoms related to the disease and treatment more intensely. In general, appetite and weight loss seen in all cancer patients is a more serious problem in advanced lung cancer patients due to the side effects of treatment. [4] The consequences of a systemic treatment (especially chemotherapy) may include problems with swallowing, coughing and persistent dyspnoea. All these symptoms have a negative impact on the type and amount of food consumed, as well as patient quality of life. Unfortunately, in many cases, malnutrition and cachexia are diagnosed before initiating systemic treatment. [5] Cachexia is a syndrome that is quite common in patients with lung cancer and negatively affects daily life activities, quality of life, tolerance to anti-cancer treatment and survival. [1,4] In a study investigating the prognostic significance of weight loss, it was reported that 59% of small cell lung cancer cases, 58% of cases with non-small cell lung cancer and 76% of patients with mesothelioma had weight loss at the beginning of the treatment. [6] In most of the chemotherapy protocols used in the treatment of lung cancer, side effects such as nausea, vomiting, anorexia, taste change, dry mouth, weakness, mucositis in the mouth and throat, pain and difficulty swallowing, diarrhea, dehydration, and neutropenia cause malnutrition in patients. [7]. Malnutrition and weight loss cause prolongation of neutropenia, interruption of the treatment protocol, impairment of general condition and demoralization of the patient. In this case, it increases the



mortality rate of the patients and causes a decrease in their survival time and the quality of life of the remaining time.

## CASE REPORT

A 72-year-old male, diagnosed with advanced Non-Small Cell Adeno Carcinoma, was given pemetrexed (920 mg) and carboplatin (500 mg) protocols for a total of 6 cycles to be taken every 21 days following the diagnosis. In the a positron emission tomography (PET) scan of the patient, metastatic nodules were detected in the left lower lobe and pleural space, and there was no distant organ metastasis. The patient, whose general condition is good, is observed to have complaints of weight loss and left flank pain in recent 3 months. The patient with type 2 diabetes mellitus (DM) and hypertension (HT) disease does not have an appetite problem at the beginning, and his weight is 75 kg. The patient, who received the first cure treatment, had complaints of headache and joint pain, influenza-like symptoms, mouth sores and loss of appetite from the second day. The patient, who had similar complaints in the first seven days, also had diarrhea for three days and lost three kilos at the end of the second week. The patient, who did not experience any side effects in the third week of the treatment, was able to regain only one and a half kilograms of his weight, although he returned to his normal diet. The patient, who took the second course, had complaints similar to the previous treatment, but on the third day, antibiotics were started due to the throat infection and continued for one week. The side effects in the patient lasted more than 10 days and he could not consume enough fluid. When the complete blood count (CBC) findings of the patient before the third cycle treatment were examined, his leukocytes (2000 /  $\mu$ L) and neutrophils (900) were low and filgrastim (three days) subcutaneous was started. Third cycle chemotherapy was applied because neutrophils increased as a result of the CBC performed one week later. Due to the weight loss (3 kg) observed in the patient, training and enteral support products (compatible with DM) were initiated in cooperation with the dietician. The patient used enteral products for a total of seven days at snacks (3 times / half dose) are starting from the first day of the third cycle

treatment. It was observed that the patient had similar side effects related to the treatment but experienced mildly (4 days), was able to eat his meals despite the lack of appetite, there was no wound in his mouth, and his complaints of fatigue were reduced. The positive effect of nutritional support was the fact that the CBC values of the patient on the 8th day were within the normal reference range, the creatine value, which had previously increased slightly, decreased to the normal range (due to adequate hydration) and the patient's morale was higher in parallel with these.

## RESULTS

Chemotherapy can cause nausea, vomiting, loss of appetite, weakness, abdominal cramps, mucositis, bloating, and paralytic ileus. Antineoplastic drugs such as cisplatin, adriamycin and methotrexate can cause severe gastrointestinal complications. [7,8]. All patients with lung cancer should be evaluated in terms of nutrition at the time of diagnosis and consultancy service should be given to these patients about nutrition. Nutritional status should be determined initially, then nutritional evaluation should be done [8]. In clinical practice, the use of screening tests to determine nutritional status is recommended (Table 1). Screening tests usually determine the patient's current weight, recent weight loss and oral intake habits [7,8].

**Table 1. Nutritional Screening Tests**

Screening Test	Methods
Subjective Global Assessment (SGA)	<ul style="list-style-type: none"> <li>• Patient history (weight loss, change in dietary habits, gastrointestinal symptoms, functional capacity)</li> <li>• Physical examination (muscle, subcutaneous fat, edema, acid)</li> <li>• Subjective assessment (good, moderate, poor nutritional status)</li> </ul>
Malnutrition	<ul style="list-style-type: none"> <li>• BMI &lt;20</li> </ul>

Universal Screening Tool (MUST)	<ul style="list-style-type: none"> <li>• The amount of weight loss in the last 3-6 months</li> <li>• Acute disease impact score</li> </ul>
Nutritional Risk Screening (NRS)	<ul style="list-style-type: none"> <li>• BMI &lt;20.5</li> <li>• Weight loss in the last 3 months</li> <li>• Decreased oral intake in the last week</li> <li>• Disease severity</li> </ul>

It is important to evaluate and monitor the nutrition of advanced stage lung cancer patients within the entire treatment program starting from the diagnosis stage with a multidisciplinary approach [8-11]. We think that it would be beneficial to follow the nutrition of the patients at the time of diagnosis and to add enteral supplements to the diet without observing the general condition disorder. In addition, healthcare professionals have a responsibility to follow the patients' adequate fluid intake, to support their nutrition gradually and natural food consumption.

## CONCLUSIONS

In conclusion, it is seen that physicians and nurses to follow the patient's nutrition better in advanced lung cancer patients have positive effects on maintaining the continuity of the treatment program and in the management of side effects. These patients should be evaluated throughout the entire treatment period from the time of diagnosis. Individual diet programs should be organized and patients should be monitored in terms of nutrition.

## REFERENCES

1. Fearon K, Strasser F, Anker SD, Bosaeus I, Bruera E, Fainsinger RL, et al. Definition and classification of cancer cachexia: an international consensus. *Lancet Oncol* 2011; 12: 489-95.

2. WHO: Fact Sheets-Cancer. Available at: <https://www.who.int/news-room/fact-sheets/detail/cancer> [Last accessed on 19th August, 2020]

3. Smolle E and Pichler M. Non-smoking-associated lung cancer: a distinct entity in terms of tumor biology, patient characteristics and impact of hereditary cancer predisposition. *Cancers* 11: 204, 2018.

4. Van der Meij BS, Schoonbeek CP, Smit EF, et al. Pre-cachexia and cachexia at diagnosis of stage III non-small-cell lung carcinoma: an exploratory study comparing two consensus-based framework. *British Journal of Nutrition* 2013; 109: 2231-2239.

5. Gibson GJ, Loddenkemper R, Sibille Y and Lundback B: The European Lung White Book: Respiratory health and disease in Europe. *Eur Respir J* 42: 559-563, 2013.

6. Ross PJ, Ashley S, Norton A. Do patients with weight loss have a worse outcome when undergoing chemotherapy for lung cancers? *Br J Cancer* 2004; 90: 1905-11.

7. Yılmaz, Ü. Akciğer kanserlerinde anoreksi, kaşeksi ve beslenme. erişim: 24.09.2018.

8. Kapucu, S. Nutritional issues and self-care measures adopted by cancer patients attending a university hospital in Turkey. *APJON* 2016; 3(4): 390-95.

9. Liposits G, Orrevall Y, Kaasa S, Osterlund P, Cederholm T. Nutrition in Cancer Care: A Brief, Practical Guide With a Focus on Clinical Practice, *JCO Oncology Practice*, 2021; 1-7.

10. Lavdaniti M. A nursing perspective of nutrition in cancer patients undergoing chemotherapy. *Prog Health Sci* 2014; 4: 131-4.

11. Kasprzyk A, Bilmin K, Chmielewska-Ignatowicz T, Pawlikowski J, Religioni U, Merks P. The role of nutritional support in malnourished patients with lung cancer, *in vivo*, 2021; 35: 53-60.

12. Laura Keaver L, Connolly P, Richmond J. Providing nutrition advice in the oncology setting: A survey of current practice, awareness of guidelines and training needs of Irish healthcare professionals in three hospitals, *Eur J Cancer Care*. 2021; 00: e13405.

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