

## Rescue Therapy in Patient with NSCLC with the Combination of Chemotherapy and Hyperthermia

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### Abstract

Lung adenocarcinomas in metastatic phase are unfortunately still burdened with a short period of survival. In this paper I present the case of Mr. SC, 70 years old, which came to my observation with widespread pre-treated disease. A personalized combination of chemotherapy and hyperthermia has made it possible to prolong survival and improve quality of life.

**Keywords:** Lung adenocarcinoma; Non-small-cell lung carcinoma; Chemotherapy; Oncological hyperthermia

### Introduction

The high grade lung tumors predominantly affect adults and have a high biological aggressiveness. It is difficult to get a remission after the second line drug therapy [1]. In this article carry over the experience with a man which has obtained disease response with the fifth therapeutic line. This has made it possible to improve the quality of life by prolonging survival. The patient is alive today (September 2017) and continues his therapeutic regimen.

### Case Report

Mr. SC, following the CT examination carried out in April 2014, received a diagnosis of neof ormation of the right pulmonary lobe with a 2 cm size. For this pathology, the upper right lobectomy intervention was performed. The histological examination on the surgical piece showed adenocarcinoma (Non-small-cell lung carcinoma-NSCLC) G2/G3 with the involvement of 3 non-capping mediastinal lymph nodes at the previous PET examination with FDG. The patient underwent three cycles of adjuvant chemotherapy with CDDP and gemcitabine [2] +RT. PET reevaluation in April 2015 highlighted mediastinal lymph node captivating repetitive nature. In May 2015, surgical removal of the same lymph node was performed, which was colonized by a high grade neoplastic form (G3). It was followed by a new adjuvant CHT based on carboplatin and pemetrexed for five cycles [3]. From the fifth cycle, also mediastinal adjuvant RT was taken with the maximum possible dosage, compatibly with the previous RT treatment. The patient arrived at my observation in April 2016 after a CT evaluation in March 2016 that showed the presence of multiple micro nodules in both lung fields of repetitive significance. Treatment was administered in chemotherapy with docetaxel [4] concomitant with deep capacitive hyperthermia at radio frequency [5,6]. Treatment was hesitant in disease stabilization until October 2016. For progression, new treatment with weekly CDDP and vinorelbine [7] every two weeks; this treatment led to three months of disease stabilization. After a massive new metastasis, it was decided for a fifth therapeutic rescue line with a combination of nab-paclitaxel [8] with a

weekly dose of 100 mg/m<sup>2</sup>, a daily dose of 100 mg temozolomide [9] from the first to fifth day of the week, epirubicin [10,11] at 25 mg/m<sup>2</sup> weekly. In addition, deep capacitive radio frequency capacitive hyperthermia applications with alternating days of single duration of 55 minutes [5,6,12]. After two months, a CT test showed partial response with disease reduction and improvement of symptomatology (mainly dyspnoea). Treatment is going on and patient feels better.

### Discussion and Conclusion

A neoplastic form in metastatic phase is certainly a very risky event for survival. Lung tumors not with small cells do not escape this rule. Getting a disease response in a patient who has already received four treatment lines is no small thing. Generally the lines considered the most promising are the first two and already from the third line one can expect a resistance of neoplastic cells. The combination of original and personalized medications finds synergy with the treatment in deep capacitive hyperthermia at radio frequency. A single event cannot define anything conclusive but can be interesting inspiration for further study.

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