



## Hyperthermia in the patients with small cell lung cancer

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### Introduction

Small cell lung cancer (SCLC) has more rapid doubling time and earlier development of widespread metastasis than non-small cell lung cancer. SCLC is highly sensitive to initial chemotherapy (CTx) and radiotherapy (RTx) but, recurs or spreads quickly. In addition, the surgical role in SCLC is still insignificant. So, the new treatment modality besides conventional treatments is needed to get a better prognosis. The aim of this study is to evaluate the effectiveness of hyperthermia in SCLC patients

### Materials and methods

We retrospectively reviewed the medical records of 28 SCLC patients who were diagnosed with SCLC from January 2004 to December 2012. Nineteen patients underwent the treatment of hyperthermia (hyperthermia group), and 9 patients did not undergo (control group). The patients who underwent < 1 cycle of hyperthermia or surgical procedures were excluded. For hyperthermia, EHY-2000 system (Oncotherm GmbH, Troisdorf, Germany). One cycle was defined as 12 times (1 hour per time, 2 times per week). The patients' characteristics and survival rates of each group were analyzed.

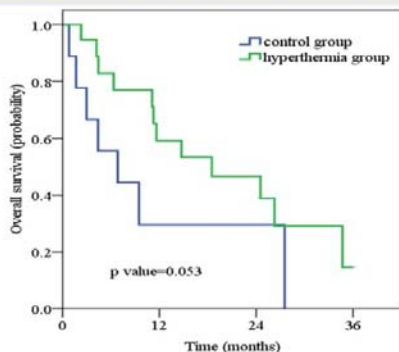
### Results

#### Patients' characteristics

	Hyperthermia group	Control group	P value
Gender			0.615
Male	16	8	
Female	3	1	
Median age (range, years)	67 (52~79)	67 (58~84)	0.148
Concurrent treatments			
CTx	14	6	0.516
RTx	8	0	0.024
Median follow-up time (range, months)	14.7 (2.3~36.0)	6.8 (0.8~27.5)	0.442

The Gender distribution, median age, and median follow-up time were not statistically significant. The numbers of patients who underwent concurrent CTx were not different in each group but, more patients in hyperthermic group underwent concurrent RTx than control group

#### Overall survival rates



Comparing overall survival rates between hyperthermia group and control group, the survival rate of hyperthermia group was better than that of control group, but it did not have statistic significant (p value=0.053).

### Discussions

Hyperthermia in SCLC has a lot of important advantages. 1) It is applicable to patients with poor functional status. 2) It can be performed with CTx and RTx. 3) It has very low morbidity. But, there are several limitations in this study. 1) Small number of patients was included. 2) There are bias of CTx and RTx.

Although the results of this study did not reach the statistic importance, hyperthermia may be good treatment option in the patients with SCLC.