Prognostic effect of age on survival of patients with stage I adenocarcinoma of the lung

Jeong-Seon Ryu[1], Chang-Min Choi[2], Seok-Chul Yang[3], Sang-Yun Song[4], Young-June Jeon[5], Tae-Won Jang[6], Do-Jin Kim[7], Seung Hun Jang[8], Sei-Hoon Yang[9], Min-Ki Lee[10], Kwan-Ho Lee[11], Hyang-Jeong Jo[9], Se-Jin Jang[2], Young-Tae Kim[3], Jae-Hwa Cho[1], Yoo-Duk Choi[12], Hae-Seong Nam[1], Hyun-Jung Kim[1], and Young Ju Suh[13]

[1]Center for Lung Cancer and Pulmonary Division, Department of Internal Medicine, Inha University Hospital, Inchon; [2]Department of Pulmonary and Critical Care Medicine, Asan Medical Center, College of Medicine, University of Ulsan, Seoul; [3]Division of Pulmonary and Critical Care Medicine, Department of Internal Medicine, Seoul National University College of Medicine, Seoul; [4]Department of Thoracic and Cardiovascular Surgery, Chonnam National University Hwasun Hospital, Hwasun-gun; [5]Department of Internal Medicine, School of Medicine, Keimyung University, Daegu; [6]Department of Internal Medicine, College of Medicine, Kosin University, Busan; [7]Division of Respiratory and Allergy Medicine, Soonchunhyang University Hospital, College of Medicine, Bucheon; [8]Division of Pulmonary, Allergy & Critical Care Medicine, Hallym University Sacred Heart Hospital, Hallym University College of Medicine, Anyang; [9]Department of Internal Medicine, Wonkwang University Hospital, Iksan; [10]Department of Internal Medicine, School of Medicine, Pusan National University, Busan; [11]Department of Internal Medicine, School of Medicine, Yeungnam University, Daegu; [12]Department of Pathology, Chonnam National University Hwasun Hospital, Hwasun-gun; [13]Clinical Research Institute, School of Medicine, Inha University, Incheon, Korea

---

ABSTRACT

Aims and background. It is still unclear whether age is an independent prognostic factor in patients with stage I NSCLC.

Methods. Five hundred and sixty-nine patients with stage I adenocarinoma who underwent surgical resection as first treatment were included. The effect on overall survival of age, gender, smoking habits, Charlson comorbidity index score (CCIS), type of surgery, tumor size and lymphatic or blood vessel invasion was analyzed.

Results. When the patients were divided into four groups according to quartiles of age, distributions of gender, smoking habit, CCIS, histology, blood vessel invasion and adjuvant chemotherapy were significantly different among the four groups. Age, gender, smoking habit, CCIS, tumor size and lymphatic and blood vessel invasion were significantly associated with overall survival of the patients in Kaplan-Meier analysis (logrank, $P <0.001$, $P <0.001$, $P = 0.029$, $P <0.001$, $P = 0.001$, $P = 0.001$ and $P = 0.007$, respectively). Moreover, the highest quartile of age (over 68 years old) was a prominent determinant for a worse prognosis after adjustment for the confounding variables using a Cox proportional hazard model (adjusted hazard ratio = 2.735, 95% confidence interval = 1.623-4.608, $P <0.001$).

Conclusions. The findings suggest that age is an important determinant of overall survival in patients with stage I adenocarcinoma. Therefore, age should be considered in classifying the patients into groups of higher or lower risk for death as well as in designing clinical trials.