ABSTRACT (250 words)

Background: While advanced age is a main prognostic factor in patients with tuberculosis, the factors that specifically affect tuberculosis-related death are unclear because elderly people are at a risk for other age-related lethal diseases. We hypothesized that performance status, a prognostic factor originally developed for cancer patients, would predict the prognosis of elderly tuberculosis patients. We aimed to assess the impact of performance status on tuberculosis-related death among elderly patients with lung tuberculosis.

Methods: Elderly patients (>65 years of age) admitted to National Hospital Organization Nishi-Beppu Hospital for bacteriologically-diagnosed lung tuberculosis from January 2013 to December 2015 were included in this retrospective study, which analyzed the influence of performance status on tuberculosis-related in-hospital death, with non-tuberculosis-related death as a competing risk.

Result: Forty and 19 of the 275 patients included in the study died from tuberculosis-related causes and non-tuberculosis-related causes, respectively. The tuberculosis-related death group had a greater number of patients with a poor performance status (defined as category 3 and 4 [HR 20.526; 95%CI 2.810-149.906; p=0.003]), a lower serum albumin level (HR 0.206; 95%CI 0.111-0.383; p<0.001) and a higher C-reactive protein level (HR1.075; 95%CI 1.026-1.127; p=0.002). A multivariate competing risk regression analysis showed that a poor
performance status (HR 8.192; 95%CI 1.125-59.662; p=0.038) and low albumin level (HR 0.270; 95%CI 0.122-0.599; p=0.001) significantly predicted tuberculosis-related death.

**Conclusion:** Performance status was independently associated with tuberculosis-related mortality among elderly patients with lung tuberculosis. It is necessary to validate these results in a prospective study and consider interventions against these prognostic factors.