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Title: Impacts of multi and specific co-morbidities on the survival of non-surgical non-small cell lung cancer

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Body: Background: The prognosis of patients with non surgical non-small cell lung carcinoma (NSCLC) is poor and the presence of co-morbidity may shorten the survival. This study aimed to determine the impacts of multi and specific co-morbidities on the survival of non-surgical NSCLC patients. Methods: We prospective followed up 603 Chinese patients with newly diagnosed primary NSCLC who were consecutively recruited from a largest oncology center in Hong Kong during 2003-2006 and ineligible for surgery through 31 December, 2008. Multiple Cox's proportional hazard model was performed to evaluate the impacts of co-morbidity on survival. Results: The median survival for all patients was 9.30 months (range: 0.17 – 70.6), and the cumulative 2-year survival rate was generally poor (<12%); 56.7% of patients presented any co-morbidity at the time of diagnosis and 14.3% of them had 3 co-morbidities. Multiple Cox's proportional hazard model showed that only the patients with the major co-morbidity group of 'endocrine, nutritional and metabolic disease and immunity disorder (240 - 279) (HR=1.33, 95% CI: 1.00 – 1.79) was significantly associated with shorter survival, while the effects were generally weak and borderline for most major groups or specific types of co-morbidities. Conclusion: This study reveals that 'endocrine, nutritional and metabolic disease and immunity disorder' was the significant risk factor to shorten the survival for non-surgical NSCLC which raises special attention for better supportive or palliative care for lung cancer patients with this type of co-morbidity.