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Title: Role of progestrin releasing peptide (ProGRP), a serum based biomarker in early diagnosis of SCLC in cohort of high-risk patient presenting with symptoms related to lung cancer

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Body: Lung cancer has become the top killer among malignant tumors in China during past three decades. Mortality rate of lung cancer are about 23 times and 13 times higher in current male and female smokers compared to lifelong nonsmokers. An estimated 350 million people smoke in China. Early diagnosis of lung cancer and more significantly Small Cell Lung Cancer (SCLC) is a major challenge. In the present study we analyzed serum samples of 144 high-risk patients using a serum based biomarker panel comprising of CEA, CYFRA 21-1, SCC, and ProGRP. These patients visited our service, during June 2011 to January 2012 with symptoms related to lung cancer. The average age of patients was 64.14 ± 8.59 years. Total 92 patients were diagnosed with lung cancer (73 NSCLC, 16 SCLC, 3 unknown), 44 patients were diagnosed of non-malignant tumors while 8 patients had unknown clinical diagnosis of the lesion. The final diagnosis was based on pathology results. We found increased levels of ProGRP in patients diagnosed with SCLC. The mean ProGRP conc. in patients with SCLC was 3731 pg/mL compared to the mean value of 33 pg/mL for patients with NSCLC and 54 pg/mL for patients with non-malignant tumors. The results showed that ProGRP can be useful to identify patients that may have SCLC with a simple blood test on the same day which can lead to early diagnosis of SCLC by histological method and hopefully better prognosis. This test may also improve the differential diagnosis and selection of treatment for the patient. This study was supported by National Basic Research Program of China (973 Program) No. 2012CB933300.