Serum CYFRA 21-1 and CEA level as predicting markers for non-small cell lung cancer stages III and IV

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Background: Several serum markers have been shown to be effective for help diagnosis and monitoring lung cancer including CYFRA 21-1 and CEA. However, many data are still in controversy. Aims: (1) To confirm efficacy of CYFRA 21-1 and CEA as predicting marker for advance non-small cell lung cancer (NSCLC). (2) To define optimal cut point to predict the treatment outcome from sensitivity and specificity analysis.

Method: In this single center prospective study, serum from advance NSCLC was collected at baseline, between and at the end of treatment session to evaluated correlation of serum marker and standard assessment of treatment response.

Results: 40 patients were included, (70%) patients were adenocarcinoma and 9 (22.5%) were squamous cell carcinoma, 2 (5%) patients were large cell carcinoma and 1 (2.5%) was none otherwise specify. The treatment response was partial response (PR) in 20 (50%) patient, stable of disease (SD) in 11 (27.5%) patient, progression of disease (PD) in 9 (22.5%) patient. Disease control rate is 77.5%. The study met primary end point, the result demonstrated significant correlation between dynamic change of serum CYFRA level and clinical benefit from radiologic assessment. In contrast, dynamic change of serum CEA level did not show any significant correlation. Odd ratio of treatment benefit with 95% Confidence interval of dynamic change of serum CYFRA is 0.73 (95%CI 0.53-0.99, p-value = 0.045). From sensitivity, specificity, AuROC curve and LR (likelihood ratio of positive) analysis, the most optimal cut point to defined responder is 2 ng/ml reduction of CYFRA level from baseline.

Conclusion: CYFRA 21-1 have capability to predict benefit of treatment and determine responder.