



Detecting circulating tumor cells in patients with advanced non-small cell lung cancer

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ABSTRACT. We explored the expression and clinical significance of circulating tumor cells (CTCs) in patients with advanced non-small cell lung cancer (NSCLC). Sixty-six patients with advanced NSCLC at the Oncology Department of Jinzhou Hospital were selected as an observation group between February and December 2013. Healthy volunteers and 20 benign lung disease patients were taken as a control group. Peripheral blood CTCs in the observation and control groups were detected using the CellSearch[®]. CTC detection and analysis system, and the relationship between the expression and clinical effect of CTCs and disease progression was analyzed. Peripheral blood CTCs were observed in 47 of the 66 observation group cases (71.21%), but none were found in the control group ($P < 0.05$). The CTC-positive rate was independent of NSCLC patients' age, gender, smoking habits, histological features, and degree of differentiation ($P > 0.05$). The CTC-positive rate correlated with pathological staging ($P < 0.05$). After two

courses of chemotherapy, the number of cases with CTCs ≥ 3 decreased significantly, compared with pre-chemotherapy cases ($P < 0.05$), and the disease did not progress in 37 cases (34 cases with < 3 CTCs and three cases with ≥ 3 CTCs). Eight cases displayed disease progression, of which five cases had < 3 CTCs and three cases had ≥ 3 CTCs. There was a statistically significant correlation between CTC changes and disease progression ($P < 0.05$). The CTC-positive rate correlated with the pathological staging and changes in the number of CTCs were associated with chemotherapy efficacy and disease progression.

Key words: Circulating tumor cells; Non-small cell lung cancer; Lung cancer