

Matrix metalloproteinase-9 decreased after chemotherapy in patients with non-small cell lung cancer

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ABSTRACT

Aims and background. The aim of the study was to investigate the alteration in serum matrix metalloproteinase-9 (MMP-9) levels after chemotherapy and the association between the changes in serum levels of MMP-9 and response to chemotherapy in patients with advanced stage non-small cell lung cancer.

Methods and study design. Twenty-eight consecutive patients with advanced non-small cell lung cancer and 24 healthy controls were enrolled in the study. The patients were treated with cisplatin-based combination chemotherapy. After two cycles, the response was evaluated. Before and after two cycles of chemotherapy, serum samples were collected from the patients.

Results. Prechemotherapy MMP-9 (ng/ml) levels were significantly higher in patients with advanced stage non-small cell lung cancer than in controls (7.2 ± 2.8 vs 4.5 ± 2.1 , $P < 0.001$). Prechemotherapy MMP-9 levels were elevated compared to postchemotherapy levels as well (7.2 ± 2.8 vs 5.2 ± 3.3 , $P = 0.005$). Prechemotherapy MMP-9 levels were significantly higher than postchemotherapy MMP-9 levels in patients with partial response (7 patients) (8.2 ± 1.8 and 3.2 ± 2.3 , respectively; $P = 0.018$), but the pre- and postchemotherapy MMP-9 levels were no different in patients with stable disease or progressive disease (21 patients) (7 ± 3.1 and 5.9 ± 3.3 , respectively; $P = 0.08$).

Conclusions. The difference between pre- and postchemotherapy MMP-9 levels in responders was more prominent than that in nonresponders. Whether the decline in serum MMP-9 levels might be used as a marker of response to chemotherapy should be investigated in larger studies.

Key words: chemotherapy, matrix metalloproteinase-9, non-small cell lung cancer.

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