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Diagnotic Value of the Combined Determination of Telomerase Activity in Induced Sputum, Pleural Effusion and Fiberobronchoscopic Biopsy Samples in Lung Cancer

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摘要

Background and objective It has been proven that telomerase activation correlates with the carcinogenesis, aggressiveness and turnover of lung cancer. Telomerase is one of the improtant molecular biomarkers for diagnosis and targeting therapy in lung cancer. The aim of this study is to investigate the diagnostic value of the combined determination of telomerase activity in induced sputum, pleural effusion and fiberobronchoscopic biopsy in lung cancer patients. Methods The technique of TRAP (telomeric repeat amplification protocal)-PCR-ELISA was employed to detect telomease levels of induced sputum, pleural effusion and fiberobronchoscopic biopsy in 80 lung cancer patients with pleural effusion and 50 benign pulmonary disease patients with pleural effusion. Results Telomemse levels of induced sputum, pleural effusion and fiberobronchoscopic biopsy were all significantly higher in patients with lung cancer than those with benign pulmonary disease ($P < 0.001$). There was no significant difference in the level of telomerase activity between different pathologic types ($P > 0.05$). The sensitivity of induced sputum, pleural effusion and fiberobronchoscopic biopsy were 62.5% (50/80), 46.3% (37/80) and 60.0% (48/80), respectively. The specificity were 72.0% (36/50), 66.0% (33/50) and 70.0% (35/50), respectively. The overall accuracy were 66.2% (86/130), 53.8% (70/130) and 63.8% (83/130), respectively. The sensitivity, specificity and overall accuracy of combined induced sputum, pleural effusion and fiberobronchoscopic biopsy were 85.0% (68/80), 78.0% (39/50) and 82.3% (107/130), respectively. The sensitivity of telomease level in combined detection for diagnosis of lung cancer was much higher than that in single sample detection ($P < 0.01$). Conclusion The sensitivity of telomease activity in combined three samples was the highest. It can further improve the accuracy for the diagnosis of lung cancer with pleural effusion.

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