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Serum Markers CA153, CA199, CEA, TRAIL, and sFas Along with Inflammatory Cytokines (MIF, Leptin, IL8, HGF, and TNFα) in Lung Cancer

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Abstract

Background: The mortality and morbidity rates of lung cancer are among the highest rates of malignant tumors worldwide. It is very important to put more emphasis on the early diagnosis and treatment of lung cancer. This study aims to provide evidence for the clinical use of conventional serum tumor markers CA15-3, CA199, CEA, TRAIL, and sFas, along with inflammatory cytokines (MIF, Leptin, IL8, HGF, and TNFα) in lung cancer management.

Methods: From December 2024 to March 2025, 91 lung cancer patients and 100 healthy subjects from Sechenov University's Institute of Personalized Oncology in Moscow, Russia, were enrolled in this study. Fasting blood samples were collected with the help of a standard venipuncture method to determine its expression in serum. Statistical methods such as the chi-square test, univariate and multivariate analysis, as well as ROC, were used to analyze the data obtained using SPSS version 27.

Results: By analysis, the comparison of serum tumor markers CA15-3, CA19-9, CEA, and TRAIL levels were significantly higher in the malignant group than in the healthy group ($p < 0.05$). Inflammatory markers among the groups showed significantly higher levels of MIF, IL-8, and TNF-α in the cancer cases compared to the healthy control group.

Conclusion: Serum tumor markers, including CA15-3, CEA, TRAIL, and inflammatory markers, including MIF, IL-8, and TNF-α, were strongly associated with lung cancer. Also, CA15-3, TRAIL, and CEA could be used as a reference indicator for lung cancer diagnosis.

Keywords: lung cancer; CA15-3; MIF; CEA; TNF-α; TRAIL

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