Combination of IL-6, IL-10, and MCP-1 with traditional serum tumor markers in lung cancer diagnosis and prognosis

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ABSTRACT. Early detection and treatment is critically important for lung cancer patients. Inflammatory mediators such as IL-6, IL-10, and MCP-1 participate in lung cancer regulation. CEA, CA125, and ProGRP are commonly used serum tumor markers for lung cancer. In this study, we assessed the sensitivity and specificity of CEA, CA125, and ProGRP when used in combination with IL-6, IL-10, and MCP in lung cancer diagnosis. Serum from three different groups (healthy controls, individuals with high risk for lung cancer, and lung cancer patients) was collected. Electrochemiluminescence was used to detect expressions of CEA, CA125, and ProGRP; ELISA was used to examine serum levels of IL-6, IL-10, and MCP-1. Specificity and sensitivity of single as well as combination markers in lung cancer diagnosis were

determined. Results indicated that CEA, CA125, ProGRP, and MCP-1 were significantly up-regulated in lung cancer patients as compared to those in controls and high risk individuals. Higher IL-6 and IL-10 levels were observed in both lung cancer patients and high-risk individuals as compared to those in controls. Highest sensitivity (95.2%) in cancer diagnosis was achieved when all six markers were used. This was followed by a combination of IL-6, IL-10, CEA, CA125, and ProGRP (92.6%). The most sensitive (88.6%). Four-marker combination was composed of IL-6, CEA, CA125, and ProGRP. As the combined usage of CEA, CA125, ProGRP, IL-6, IL-10, and MCP-1 significantly improved sensitivity of lung cancer detection; this biomarker arrangement may be beneficial for early diagnosis, treatment, and prognosis of lung cancer.