

**Clinical Significance of Measuring Carcinoembryonic Antigen by Radioimmunoassay
(Second Report).—Factors that Affecting Plasma CEA levels of Patients with Gastric Cancer.—**

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Since discovery of Carcinoembryonic Antigen (CEA) by Gold in plasma of patients with gastrointestinal cancer in 1965, its clinical significance and usefulness has been widely accepted. However, its reliability is still controversial. Therefore, we have attempted to clarify the factors which may affect plasma CEA levels in patients with gastric cancer. CEA in plasma of 83 patients with gastric cancer and in tissues of 32 resected stomach were measured by radioimmunoassay using Z-gel method of CEA-Roche kit. The resected stomach were studied histologically and then homogenized and CEA-like substance was extracted with V/V 1.2 mol Perchloric acid.

In the advanced gastric cancer, higher plasma CEA levels were observed in the protruded type with an order of Borrmann's classification I, II, III and IV with tiers of 15.15 ± 9.00 , 6.85 ± 6.95 , 3.60 ± 2.53 , 1.62 ± 1.13 ng/ml respectively. Plasma CEA levels were not increase in cases of

cancer with invasion of M and Sm, but they become higher with invasion of Pm, Ss and more higher with distant metastasis. CEA-like substance levels in tissues of gastric cancer were the lowest in the poorly differentiated adenocarcinoma (Ad.) with 433 ng/g and become higher in an order of Ad. papillare 1831, Ad. tubulare 2314, Ad. muconodulare 8391 and Ad. mucocellulare 29791 ng/g. There were no correlation between cancer weight and plasma CEA levels, likewise, between CEA-like activity in cancer tissues and plasma CEA levels. In cases with total CEA-like activity over 7000 ng in gastric cancer, plasma CEA levels were mostly elevated. Tissue CEA-like activity were about 50 times higher in cancer tissues than in surrounding non-cancer tissues. CEA producing ability of cancer seemed to depend on basic ability of surrounding non-cancer tissue (cancer arising tissue).

Clinical Evaluation of Plasma CEA Level in Lung Cancer

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Plasma CEA levels in patients with lung cancer and other respiratory diseases were measured by radioimmunoassay using CEA-ROCHE kit.

Subjects were 25 normal cases, 97 cases with non-malignant respiratory disease, 116 cases with lung cancer and 28 cases with metastatic lung tumor.

It was considered that CEA level under 5.0 ng/ml was negative and level over 5.1 ng/ml was positive in this method.

CEA level under 5.0 were observed in 96% of 25 normal cases and 91% of 97 cases iwth non-

malignant respiratory disease. There was no case who showed CEA levels over 10 ng/ml in normal cases and non-malignant respiratory diseases. It was considered, therefore, that CEA level over 10 ng/ml was effective level to detect the presence of malignant tumor.

In malignant respiratory diseases, positive CEA were observed in 47% of 116 cases with lung cancer and 57% of 28 cases with metastatic lung tumor.

CEA level of lung cancer was observed in terms of the clinical stage of the Japan Lung Cancer