

Serum Endoglin and Hepatocyte Growth Factor; Correlation with the Clinical Presentation of Breast Cancer Patients

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Abstract

Objective: To estimate the relationship between serum levels of endoglin (CD 105) and hepatocyte growth factor (HGF) and the clinical presentation of breast cancer patients which would correlate with tumor prognosis.

Methods: The current prospective study included 37 newly diagnosed female patients with breast cancer and 23 healthy women as a control group. All patients were carefully assessed by history taking, complete physical examination, and staging work up. Blood samples were collected from all candidates for measurements of serum levels of endoglin and HGF.

Results: The median age of the patients was 43 years (range 31–75 years) and about 65% of them (24 patients) were postmenopausal. Fourteen patients had negative estrogen and progesterone receptors. Staging work up revealed that 20 patients (54%) had T1, T2 disease, regional lymph nodes were involved in 34 patients (91.9%) and 22 patients (59.5%) had distant metastasis. Serum endoglin level was higher in breast cancer patients than that of controls (5.33 ± 2.13 Vs 3.99 ± 1.22 ng/ml) and the difference was statistically significant ($p=0.045$). However, the endoglin level did not differ significantly according to the menopausal status, primary tumor size, regional lymph nodes involvement or the presence of distant metastases. The significant difference was only noticed according to hormone receptor status. Serum HGF in breast cancer patients (2449 ± 1129 pg/ml) was higher than controls (2270 ± 760 pg/ml), but the difference was not statistically significant ($p=0.57$). The HGF level differed significantly according to the primary tumor size (T1, T2 Vs T3, T4) and the presence of metastatic spread (M0 Vs M1).

Conclusion: Serum endoglin correlated with breast cancer more than HGF and both reflected the severity of progression as well as the metastatic potential. Moreover, endoglin has the potential to be an ideal target for antiangiogenic therapy and a useful marker of early detection of breast cancer or tumor relapse