

## Prognostic value of serum level of interleukin-6 and interleukin-8 in metastatic breast cancer patients

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Previous studies indicated that interleukins may stimulate cancer cells growth and contribute to loco regional relapse as well as metastasis. The aim in this study was to investigate the level of interleukin-6 (IL-6) and interleukin-8 (IL-8) in metastatic breast cancer patients and find out the relation between the levels of these cytokines and the clinical outcome of patients and to predict the value of these cytokines as independent prognostic factors. The present study was carried out on 40 women divided into two groups; the first group included 30 patients diagnosed as having metastatic breast cancer. The second group included 10 healthy women as controls. An immunoenzymometric assays for the quantitative measurement of human IL-6 and IL-8 were used. The serum level of IL-6 and IL-8 were measured for patients and controls. Serum level of both IL-6 and IL-8 were found to be higher in patients than in healthy volunteers. Serum IL-6 was detected in all patients and controls with a mean value of (25.3 pg/ml) versus (1.5 pg/ml) for patients and controls respectively and this difference was statistically highly significant ( $P < 0.001$ ). Serum IL-8 was detected in 26 patients (86.7%) and 7 controls (70%) with a mean value of (8.96 pg/ml) versus (3.9 pg/ml) for patients and controls respectively and this difference was also statistically highly significant ( $P < 0.001$ ). Tumors with size larger than 5 cm at diagnosis were associated with higher level of both IL-6 (32.8 pg/ml) and IL-8 (10.2 pg/ml) in comparison with those with size less than 5cm (IL-6 14 pg/ml) and (IL-8 7.2 pg/ml) and the difference in both cases was statistically significant ( $P < 0.05$ ). Patients with more than 3 positive lymph nodes had higher level of both IL-6 and IL-8 with a mean value of 32.8 pg/ml and 10.2 pg/ml for IL-6 and IL-8 respectively, than those with less than 3 positive lymph nodes with mean value of 14 pg/ml and 6.9 pg/ml for IL-6 and IL-8 respectively and this difference was statistically significant ( $P < 0.05$ ). Seventeen of the patients had only one metastatic site (bone or liver or lung metastasis) and 13 had more than one metastatic site and the difference between the two groups was statistically highly significant regarding both IL-6 and IL-8 ( $P < 0.001$ ). The mean level of IL-6 was 14.6 pg/ml for patients with one metastatic site versus 29.2 pg/ml for patients with more than one metastatic site. The mean level of IL-8 was 6.2 pg/ml versus 11.3 pg/ml for patients with one metastatic site and patients with more than one metastatic site respectively. However, the level of IL-6 and IL-8 did not correlate with hormonal receptors status, tumour grade, menopausal status or site of metastasis. Thus, it could be concluded that serum level of IL-6 and IL-8 are useful prognostic factors in metastatic breast cancer patients.