Comparison of Interleukin-33 Serum Levels in Patients with Breast Cancer and Idiopathic Granulomatous Mastitis

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Abstract

Background: Breast cancer (BC) is the main cause of cancer death in women. Idiopathic granulomatous mastitis (IGM), a rare chronic disease that clinically mimics breast carcinoma, and is associated with high mortality and morbidity, but an immediate and accurate diagnosis can substantially decrease these rates. Expressed by numerous human tissues, interleukin-33 (IL-33) has an inductive role in the network of pro-inflammatory cytokines. The aim of this study was to investigate the serum levels of IL-33 in BC and IGM patients in comparison with healthy women.

Materials and Methods: This descriptive-analytical study was carried out on 28 patients with BC and 25 patients with IGM as the patient groups and 25 healthy volunteers with normal screening reports as the control group. Histopathological pattern of BC and IGM were confirmed by specialized pathologists. The serum concentration of IL-33 was measured using enzyme-linked immunosorbent assay (ELISA) kit according to the manufacturer's instructions.

Results: The mean age of the patients with BC and IGM and the control group was 49.1, 37.1, and 36.8 years, respectively. There was no significant difference in IL-33 expression among the participants with regard to age, marital status, body mass index (BMI), and menopausal status. IL-33 assay indicated a significant difference between the BC (P=0.011) and IGM (P=0.031) groups compared to the controls, although no substantial differences were observed between the IGM and BC groups.

Conclusion: IL-33 can be considered a significant factor distinguishing IGM and BC patients from controls, although it cannot be applied to diagnose and differentiate BC from IGM patients.

KeyWords: *Breast Cancer, idiopathic Granulomatous Mastitis, Interleukin-33*