Reduced levels of T-helper 17-associated cytokines in the serum of patients with breast cancer: indicators for following the course of disease.

Baharlou R[1], Atashzar MR[1], Vasmehjani AA[1], Rahimi E[2], Khoshmirsafa M[1], Seif F[1], Mahdiyar M[3].

Abstract

Interleukin (IL)-17-producing CD4(+) T helper (Th17) cells that are known to produce IL-17 have recently been defined as a unique subset of proinflammatory helper cells. Interleukin 17 is an inflammatory cytokine with robust effects on many cells. It can play important roles in the pathogenesis of diverse groups of immune-mediated diseases. In this regard, the present case-control study aimed at determining serum levels of IL-17, IL-6, and transforming growth factor β (TGF-β) in Iranian breast cancer patients. Blood samples were collected from 55 patients with breast cancer and 34 healthy individuals with no history of malignancies or autoimmune disorders, based on simple sampling. The serum levels of IL-17, IL-6 and TGF-β were measured by enzyme-linked immunosorbent assay (ELISA). The serum level of IL-6 was significantly lower in patients with breast cancer compared with healthy individuals ($p = 0.0003$), and also the IL-17 was lower in the patient group than in controls ($p = 0.01$). Interestingly, the TGF-β serum level in patients was less than in controls ($p < 0.0001$). As most of the cases investigated in this study were in their early stages, it can be concluded that reduced IL-17, IL-6, and TGF-β can be used as predictors for clinical stage and prognosis of cancers such as breast carcinoma.

KEYWORDS:

T-helper 17; breast cancer; interleukin 17; interleukin 6; transforming growth factor β