

Increased Interleukin-17 Transcripts in Peripheral Blood Mononuclear Cells, a Link Between T-Helper 17 and Proinflammatory Responses in Bladder Cancer

[Rasoul Baharlou](#),¹ [Abdolaziz Khezri](#),^{2,3} [Mahboobeh Razmkhah](#),³ [Mojtaba Habibagahi](#),⁴ [Ahmad Hosseini](#),³ [Abbas Ghaderi](#),^{3,4} and [Mansooreh Jaberipour](#)^{3,*}

Abstract

Background:

Interleukin (IL)-17-producing CD4+ T helper (Th17) cells that are known by producing IL-17 have recently been defined as a unique subset of proinflammatory helper cells. IL-17 is an inflammatory cytokine with robust effect on many cells and it can play important roles in pathogenesis of diverse groups of immune-mediated diseases.

Objectives:

The aim of this case-control study was to determine the gene expression of IL-6, IL-17, and transforming growth factor beta (TGF- β) in Iranian patients with bladder cancer.

Patients and Methods:

Blood samples were collected from 37 patients with bladder cancer and 37 healthy individuals with no history of malignancies or autoimmune disorders, based on simple sampling. The expression of IL-6, IL-17, and TGF- β were measured by quantitative real-time polymerase chain reaction (qRT-PCR).

Results:

The mean of IL-17 transcripts was significantly higher in patients with bladder cancer compared with healthy individuals (0.33 ± 0.06 vs. 0.42 ± 0.14 ,) ($P = 0.04$), but their TGF- β was lower (12.53 ± 8.41 vs. 54.94 ± 17.95 ,) ($P = 0.04$). However, the IL-6 transcripts level was similar in both groups (5.34 ± 2.40 vs. 8.07 ± 3.28 ,) ($P > 0.05$) and there was not any significant difference between the noted cytokines expressions among patients with different stages and grades.

Conclusions:

As most of the cases studied in this investigation were in stages I and II, IL-17 as a prominent proinflammatory cytokine may play an important role in recruiting and infiltrating of antitumor immune responses in early stages of bladder cancer. Furthermore, it can be used as predictor for the clinical stage and prognosis of cancers such as bladder carcinoma.

Keywords: Interleukin6, Interleukin17, Transforming Growth Factor Beta