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Shark Cartilage Modulate IL-23/IL-17 Axis by Increasing IFN-γ and Decreasing IL-4 in Patients with Gastric Cancer

Authors : Razieh Zareia, Hassan ZMB, Darush Moslemic, Amrollah Mostafa-Zaded

Abstract : Introduction: Shark is a murine organism and its cartilage has antitumor peptides to prevent angiogenesis, at least, in vitro. The purpose of our research was to evaluate the immune-effectiveness on imbalance between IL-23/IL-17 axis, as an inflammatory pathway and TGF/Foxp3 T regulatory as a inhibitory pathway of commercial shark cartilage that is available as a non-common dietary supplement in IRAN. Materials and Methods: First investigated an imbalanced supernatant of cytokines exist in patients with gastric cancer by ELISA. Associated with cytokines measuring such as IL-23, IL-17, TGF-β, IL-4, and γ-IFN, then flow cytometry was employed to determine whether the peripheral blood mononuclear cells such as CD4+CD25+Foxp3highT regulatory cells in patients with gastric cancer were changed correspondingly. Results: The simultaneously presented up-regulation IL-17A indicated, at least cytokine level without changing in TGF-β amount or CD4+CD25+Foxp3 T regulatory cells, that there are not a direct correlation between IL-23/IL-17 axis and Treg/TGF-β pathway in patients with gastric cancer treated by shark cartilage, but IL-23 was not expressed differentially in this group. So, accompany these changes, an imbalance between Th1 immunity (γ-IFN production) and TH2 immunity (IL-4 secretion) evaluated in patients with gastric cancer treated by shark cartilage. Conclusion: On the basis of results, we propose that shark cartilage, by reducing IL-4, decreasing IL-17 a central cytokine in angiogenesis and increasing γ-IFN amplify anti-tumor immune responses in patients with gastric cancer.

Keywords : IL-23/IL17 axis, TGF-β/CD4+CD25+Foxp3high T regulatory pathway, γ-IFN, IL-4, shark cartilage, gastric cancer
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