

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

**Authors :** Raziieh 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- $\beta$ , IL-4, and  $\gamma$ -IFN, then flow cytometry was employed to determine whether the peripheral blood mononuclear cells such as CD4+CD25+Foxp3<sup>high</sup>T 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- $\beta$  amount or CD4+CD25+Foxp3 T regulatory cells, that there are not a direct correlation between IL-23/IL-17 axis and Treg/TGF- $\beta$  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 ( $\gamma$ -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  $\gamma$ -IFN amplify anti-tumor immune responses in patients with gastric cancer.

**Keywords :** IL-23/IL17 axis, TGF- $\beta$ /CD4+CD25+Foxp3<sup>high</sup> T regulatory pathway,  $\gamma$ -IFN, IL-4, shark cartilage, gastric cancer

**Conference Title :** ICI 2015 : International Conference on Immunology

**Conference Location :** Bangkok, Thailand

**Conference Dates :** December 17-18, 2015