

## **IL-23, an Inflammatory Cytokine, Decreased by Shark Cartilage and Vitamin A Oral Treatment in Patient with Gastric Cancer**

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**Abstract :** Introduction: IL-23 is responsible for the differentiation and expansion of Th17/ThIL-17 cells from naive CD4+ T cells. Therefore, may be IL-23/IL17 axis involve in a variety of allergic and autoimmune diseases, such as RA, MS, inflammatory bowel disease (IBD), and asthma. TGF- $\beta$  is also share for the differentiation Th17 producing IL-17 and CD4+CD25+Foxp3hiT regulatory cells from naïve CD4+ T cells which are involved in the regulation of immune response, maintaining immunological self-tolerance and immune homeostasis, and the control of autoimmunity and cancer surveillance. Therefore, T regulatory cells play a key role in autoimmunity, allergy, cancer, infectious disease, and the induction of transplantation tolerance. Vitamin A and it's derivatives (retinoids) inhibit or reverse the carcinogenic process in some types of cancers in oral cavity, head and neck, breast, skin, liver, and blood cells. Shark is a murine organism and its cartilage has antitumor peptides to prevent angiogenesis, in vitro. Our purpose is whether simultaneous oral treatment vitamin A and shark cartilage can modulate IL-23/IL-17 and CD4CD25Foxp3 T regulatory cell/TGF- $\beta$  pathways and Th1/Th2 immunity in patients with gastric cancer. 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+Foxp3highT regulatory cells in patients with gastric cancer were changed correspondingly. Results: An imbalance between IL-17 secretion and TGF- $\beta$ /Foxp3 t regulatory cell pathway and so, Th1 immunity ( $\gamma$ -IFN production) and TH2 immunity (IL-4 secretion) was not seen in patients with gastric cancer treated by vitamin A and shark cartilage. But, the simultaneously presented down-regulation of IL-23 indicated, at least cytokine level. Conclusion: IL-23, as a pro-angiogenesis cytokine, probably, help to tumor growth. Hence, suggested that down-regulation of IL-23, at least cytokine level, is useful for anti-tumor immune responses in patients with gastric cancer.

**Keywords :** IL-23/IL17 axis, TGF- $\beta$ /CD4CD25Foxp3 T regulatory pathway,  $\gamma$ -IFN, IL-4, shark cartilage and gastric cancer

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