POSTER 40

The influence of tumor microenvironment immune in ovarian cancer ascites

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Doi: https://doi.org/10.51126/revsalus.v4iSup.307

Resumo

Introduction: Ovarian cancer (OC) is characterized by a particular type of metastization (via transcoelomic), and most patients are diagnosed at advanced stages with multiple tumours spread throughout the peritoneal cavity [1]. The role of malignant ascites is serving as transporter of tumor cells from primary location to the peritoneal wall or surface of peritoneal organs. Ascites comprises cellular components with malignant and non-malignant cells, and acellular components, which constitute a unique microenvironment capable of modify the tumor behavior [2]. These microenvironment factors induce tumor cell proliferation, progression, chemoresistance, and immune evasion [3] suggesting that ascites play an active role in development and progression of OC [4]. The complex immune suppression system that neutralizes antitumor immunity is one of the reasons for disease progression and treatment failure, because can be appropriated by tumor cells and become a tumor-promoting environment [5]. **Objectives:** The aim of this study is to characterize the immune cells populations present in OC ascites during the clinical course of the disease and identify an immune profile associated with patient prognosis. **Material and Methods:** Twenty-six ascites samples collected from diagnosis or after treatment of OC patients were assayed by flow cytometry. Cells were stained with antibodies against established markers of immune cells and analyze thirteen cytokines present in the acellular fraction. **Results:** The analysis of collected ascitic fluid demonstrated higher levels of pro-inflammatory cytokines in acellular fraction as well as increased expression of T-box (T-bet) and Eomesodermin (Eomes) on CD4 T cell population of patients with better prognosis. These two transcription factors are essential for T-cell mediated anti-tumor responses. The patients with better prognosis also show increased levels of the mucosal homing receptor integrin α4β7, which is responsible for the recruitment of pro-inflammatory T cells to the peritoneum. The opposite was observed in patients who did not respond to chemotherapy, which is suggestive of T-cell exhaustion.
Conclusions: The results suggest that the activation of T cells and the expression of α4β7 integrin are intimately related to a better prognosis, along with increased levels of pro-inflammatory cytokines.

Keywords: ovarian cancer; malignant ascites; tumor microenvironment; immune cells; cytokines

Keypoints:

- Characterization of immune cells and cytokines present in OC ascites and establish a profile for patients at diagnosis and after treatment.
- Comparison of samples at diagnosis and after treatment to establish a profile of good or bad response to treatment, to be able to adapt the treatment.

References:

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