Correspondence

Proliferation of $CD4^+CD25^{high+}Foxp3^+$ regulatory T lymphocytes in ex vivo expanded ascitic fluid from primary and recurrent ovarian carcinoma

To the editor: It is well established that immunosurveillance has an important role in cancer development.[1] Cancer immunosurveillance is considered an active and dynamic process of interaction between tumor cell and the host immune cells, such as natural killer cells (NK cells), dendritic cells, B-cells and T-cells. OF those immune cells, T-cells which are divided into two major subsets of CD4+ helper T cells (Th cells) and CD8+ cytotoxic T cells (CTL) are involved in establishing adaptive immune responses, which contribute to destroying cancer cells. On the other hand, regulatory T cells (Treg) are a specific subpopulation of lymphocytes that have immunosuppressive properties. In ovarian cancer, Curiel et al.[2] demonstrated that Treg cells infiltration into cancer tissues suppress tumor specific T cell immune response. Barnett et al.[3] also showed that there was an association between increased Treg cell infiltration and disease progress in ovarian cancers.

We read with interest the article by Lee et al.[4] The study by Lee et al. examined the differences of T cell subpopulations between before and after ex vivo expansion in ovarian cancer using flow cytometry. The authors isolated lymphocytes from ascitic fluids which were acquired from 19 primary ovarian cancer patients and 7 recurrent ovarian cancer patients and expanded those immune cells through ex vivo culture. The proportion of Th cells and Treg cells increased with expansion, while CTL decreased. Lymphocyte cells after ex vivo culture were larger in number in recurrent ovarian cancer than those in primary ovarian cancer. The authors showed that there were no significant differences in proportional changes of immune cells including CTL, Th cells and NK cells with ex vivo incubation between primary and recurrent ovarian cancers. However, Treg cells after ex vivo expansion in recurrent ovarian cancer were significantly higher than those in primary ovarian cancer. Through these results, the authors suggested that lymphocyte proliferation is more strongly suppressed at initial tumor stage and ex vivo expansion of T cells obtained from patients with ovarian cancer may increase the proportion of Treg cells.

However, there are several issues to be discussed. First, the higher ex vivo expansion of Treg cells population in recurrent ovarian cancer might be due to the effect of chemotherapy. Several authors demonstrated that chemotherapy induced depletion of Treg cells in treating cancer and there was a relationship between Treg cell suppression and patients' prognosis.[5,6]

Second issue is the diagnostic criteria for recurrent ovarian cancer. The patients who were diagnosed with recurrent ovarian cancer had received only 1 cycle of chemotherapy. However, all their initial tumor stages were IIIc-IV. The standard treatment of advanced ovarian cancer is cytoreductive surgery followed by 6-8 cycles of combination chemotherapy with paclitaxel and carboplatin. Why did the patients diagnosed with recurrent ovarian cancer receive only 1 to 3 cycles of chemotherapy in their initial treatment? If the authors selected specific cases in recurrent ovarian cancer, selection bias might affect the result of their study.

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