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**DYNAMIC CHANGES OF PERIPHERAL REGULATORY T CELLS DURING PARP INHIBITOR MAINTENANCE THERAPY IN PATIENTS WITH OVARIAN CANCER**

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Objectives Poly (adenosine diphosphate [ADP]-ribose) polymerase inhibitors (PARPi) are becoming the standard of care for ovarian cancer. However, it has been reported that poly(ADP-ribosyl)ation of FoxP3 negatively regulates suppressive function of regulatory T cells (Treg). Most of the studies on PARPi have focused on the tumor itself and synthetic lethality. The immunological effect, particularly the effect on Treg cells, has been overlooked. In the current study, we investigated the dynamic changes of immune properties of peripheral Treg cells during PARPi maintenance therapy and explored their clinical implications.

Methods We analyzed serial peripheral blood mononuclear cells (PBMCs) from PARPi-treated patients (n=46) with ovarian cancer using multicolor flow cytometry. The PBMCs were collected at the time points included pre-treatment as well as 1, 3, and 6 months after the initiation of treatment. Olaparib or niraparib was used as maintenance therapy.

Results First, the percentages FoxP3+CD4+ regulatory T cells (Treg cells) did not change significantly after initiation, but only the % of resting Treg cells (CD45RA+FoxP3low) increased 3 months after initiation. Second, we analyzed expression of immune checkpoints and properties of Treg cells. We found that the PD-1 and CTLA-4 expression on Treg cells significantly decreased after 3 months and TIGIT and CCR8 decreased after 6 months.

Conclusions Long-term PARPi treatment regulated suppressive function of Treg cells, but since PARPi-induced changes in Treg cells and their clinical implications has not yet been fully elucidated, further research is warranted.

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**COMPARISON OF NAPI2B EXPRESSION FROM PAIRED TISSUE SAMPLES IN A CLINICAL STUDY OF UPIFITAMAB RILSODOTIN (UPIR; XMT-1536) SUPPORTS A STRATEGY OF TESTING IN ARCHIVE MATERIAL**

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