BASTION

From Basic to Translational Research in Oncology

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Annual meetings of the American Society of Hematology are the most important international conferences related to the latest advances in the field of hematology. This year more than 20 000 of hematologists, scientists and clinicians had the opportunity to share their observations and results of conducted studies during poster sessions. I had pleasure to present the result of our studies in The Session: Lymphocytes, Lymphocyte Activation and Immunodeficiency, including HIV and Other Infections. Moreover, during the conference I had the occasion to participate in many interesting lectures referred to immunotherapy of hematological malignancies or novel therapeutics already used or tested in preclinical studies and clinical trials. This conference was for me a unique chance to meet authors of many interesting abstracts related to our area of interests and to compare and discuss our results.

In summary, Bruton's tyrosine kinase (BTK) inhibitors are extensively studied in preclinical investigations and clinical trials in the treatment of hematological malignancies derived from B-cells as a single agent or in combination with anti-CD20 monoclonal antibodies (mAbs). We have observed that this combination may indicate off-target activities and therefore we investigated how various BTK inhibitors influence antibody dependent NK-cell-mediated cytotoxicity, which is one of the mechanism of anti-CD20 mAbs. We found that ibrutinib, AVL-292 and GDC-0834 strongly inhibit rituximab-dependent NK-cell mediated cytotoxicity and cytokine secretion. Interestingly, obinutuzumab (glycoengineered type II anti-CD20 mAb)-mediated NK cells cytotoxicity is not affected by various BTK inhibitors. Moreover, various BTK inhibitors influence the expression of NK cell surface molecules such as CD25 and CD69 while the expression of activating NK cell receptors remain roughly unchanged. Our observations are important in the light of ongoing clinical trials in which novel compounds are combined with existing therapies.

TITLE: Influence of BTK inhibitors on antitumor activity of natural killer cells

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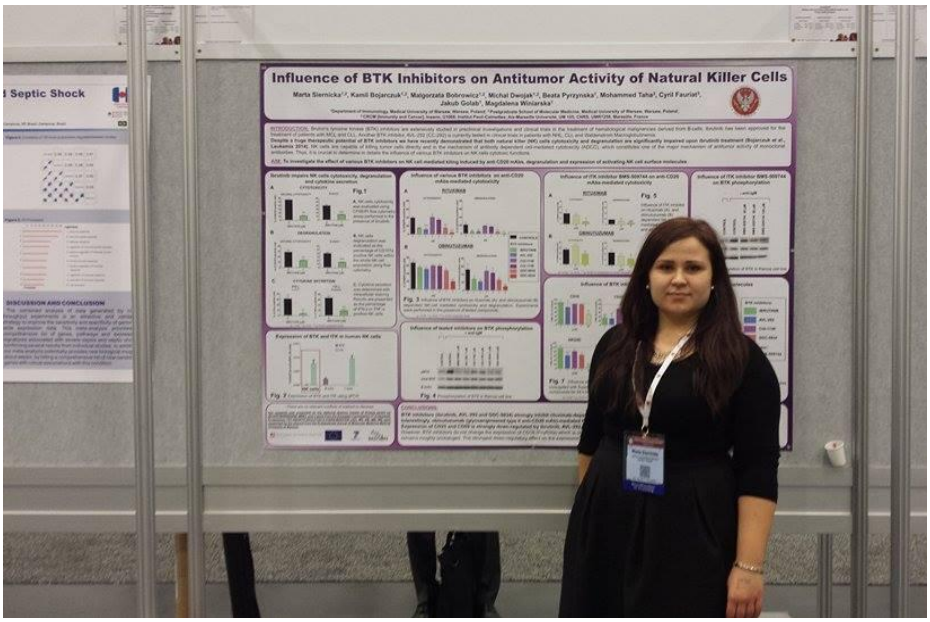

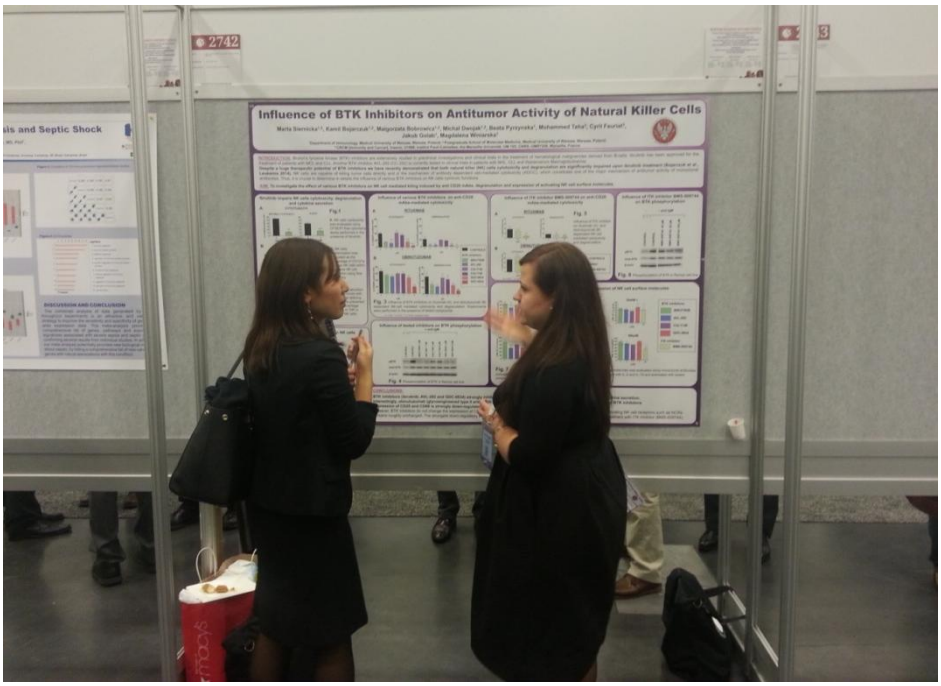

Marta Siernicka presenting the poster during poster session