Report from 56th American Society of Hematology Annual Meeting and Exposition, San Francisco, CA, USA, Dec 5-9, 2014 - Tomasz Stoklosa

American Society of Hematology Meeting is the not only biggest but one of the most prestigious hematological meeting. This year, 56th ASH Meeting in San Francisco gathered more than 26 thousands participants from all over the world, including hematologists, scientists and corporate partners. Dr Tomasz Stoklosa had a pleasure to present data during oral session entitled: **Chromosomal Rearrangements and DNA repair** chaired by Feyruz V. Rassool, Associate Professor from University of Maryland School of Medicine and Peter D Aplan from National Cancer Institute on Monday, Dec 8th

Title of the talk: Gene Expression and Mutation Analysis (GEMA) –Guided Precision Medicine Targeting PARP1 to Induce Synthetic Lethality in DNA-PK –Deficient Quiescent and BRCA-Deficient Proliferating Leukemia Stem and Progenitor Cells

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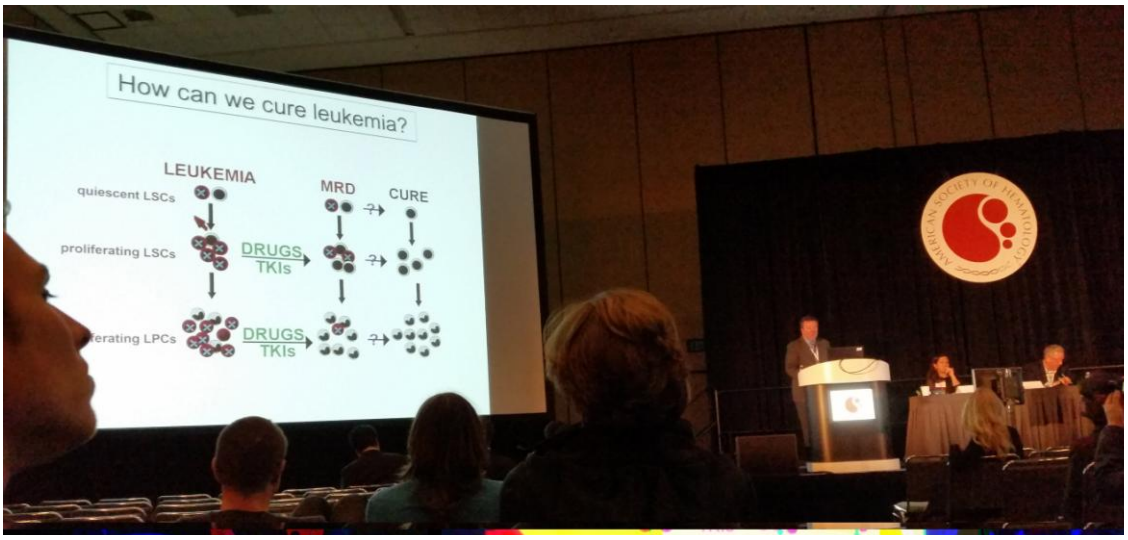

Dr Stoklosa giving his talk.

We hypothesize that Gene Expression and Mutation Analysis (GEMA) can identify individual patients with leukemias displaying “spontaneous” and oncogene-induced downregulation of DSB repair genes which will be sensitive to “synthetic lethality” triggered by PARP1i +/- already approved drugs. Leukemia stem cells (LSCs), and especially quiescent LSCs, have a dual role as tumor initiating and therapy-refractory cells. Therefore, even if anti-tumor treatment clears a disease burden consisting mostly of proliferating leukemia progenitor cells (LPCs), it usually fails to eradicate therapy-refractory LSCs and also therapy-resistant LPCs. LSCs, including quiescent LSCs and LPCs accumulate high numbers of spontaneous and drug-induced DNA lesions, including highly lethal DNA double-strand breaks (DSBs). Thus, LSCs and/or LPCs may be “addicted” to particular DNA repair mechanisms and targeting these pathways could sensitize LSCs to the lethal effect of unrepaired DSBs.

After the presentation given by Dr. T. Stoklosa several questions from the audience were asked and the discussion was continued after the session. This was an excellent opportunity to exchange knowledge and discus the results of our research with researchers from top Institutes and Universities.