ELSEVIER

Blood 142 (2023) 4967–4968

The 65th ASH Annual Meeting Abstracts

POSTER ABSTRACTS

731.AUTOLOGOUS TRANSPLANTATION: CLINICAL AND EPIDEMIOLOGICAL

Day 100 Inhibitory KIR2DL2 and Activating NKp30 Natural Killer Cell Receptors Predicts Survival Post-Autologous Stem Cell Transplantation in Lymphomas

Luis Porrata, MD[1], *Stephen M Ansell, MD PhD*[1], *Ivana Micallef, MD*[2], *Patrick B Johnston, MD PhD*[1], *J. C. C Villasboas, MD*[2], *Jonas Paludo, MD*[2], *Urshila Durani, MD MPH*[1], *Svetomir Markovic, MD PhD*[3]

[1] Division of Hematology, Mayo Clinic, Rochester, MN
[2] Mayo Clinic, Rochester, MN
[3] Department of Medical Oncology, Mayo Clinic, Rochester, MN

Introduction: Our group previously published that the infusion autograft inhibitor KIR2DL2 (CD158b+CD337-) and activating NKp30 (CD158b- CD337+) Natural killer (NK) cells receptors were predictors of clinical outcomes in lymphoma patients undergoing autologous peripheral blood hematopoietic stem cell transplantation (APBHSCT) (Porrata et al. Leukemia Research 2019; 81: 1-9). To assess if these subsets of NK cells still hold clinical relevance, we set up to investigate their prognostic ability to predict clinical outcomes at Day 100 post-APBHSCT.
Methods: 107 lymphoma patients who participated in our double-blind phase III trail (Porrata et al, Biology of Blood and Marrow Transplantation 2016; 22(6); 1017-1023) and had clinical assessment at Day 100 post-APBHSCT were included in this study. Nkp30 and KIR2DL2 at Day 100 were assessed by flow cytometry analysis.
Results: With a median follow-up for the entire cohort from Day 100 was 94.7 months (range: 4.83-158.1 months). Figure 1 shows the overall survival (OS) and progression-free survival (PFS) based on the absolute numbers of KIR2DL2 and Nkp30 NK cells. At Day 100, patients with a KIR2DL2 < 0.08 and Nkp30 ≥ 0.19 experienced superior OS and PFS compared with patients with a Day 100 KIR2DLD2 ≥ 0.08 and NKp30 < 0.19. In the multivariate analysis both the KIR2DL2 [OS: HR $= 1.767$, 95%CI, 1.302-30.31, $p < 0.04$; and PFS: HR $= 2.663$, 95%CI, 1.108-6.403, $p < 0.03$] and Nkp30 [OS: HR $= 2.594$, 95% CI, 1.239-5.432, $p < 0.01$; and PFS: HR $= 3.676$, 95% CI, 1.875-7.206, $p < 0.01$] were independent predictors for OS and PFS.
Conclusion: Day 100 inhibitory KIR2DL2 and activating NKp30 NK cells are prognostic immune-biomarkers in lymphoma patients undergoing APBHSCT.

Disclosures Ansell: *ADC Therapeutics, Affimed, Bristol-Myers Squibb Company, Pfizer Inc, Regeneron Pharmaceuticals Inc, Seagen Inc, Takeda Pharmaceuticals USA Inc.:* Other: Contracted Research. **Villasboas:** *Regeneron:* Research Funding; *Aptose Biosciences:* Research Funding; *Epizyme:* Research Funding; *Enterome:* Research Funding; *CRISPR:* Research Funding; *Genentech:* Research Funding. **Paludo:** *AbbVie:* Consultancy; *Biofourmis:* Research Funding; *Karyopharm:* Research Funding. **Markovic:** *BMS:* Patents & Royalties: Patents; *sorrento:* Patents & Royalties; *sorrento:* Research Funding.

https://doi.org/10.1182/blood-2023-173453

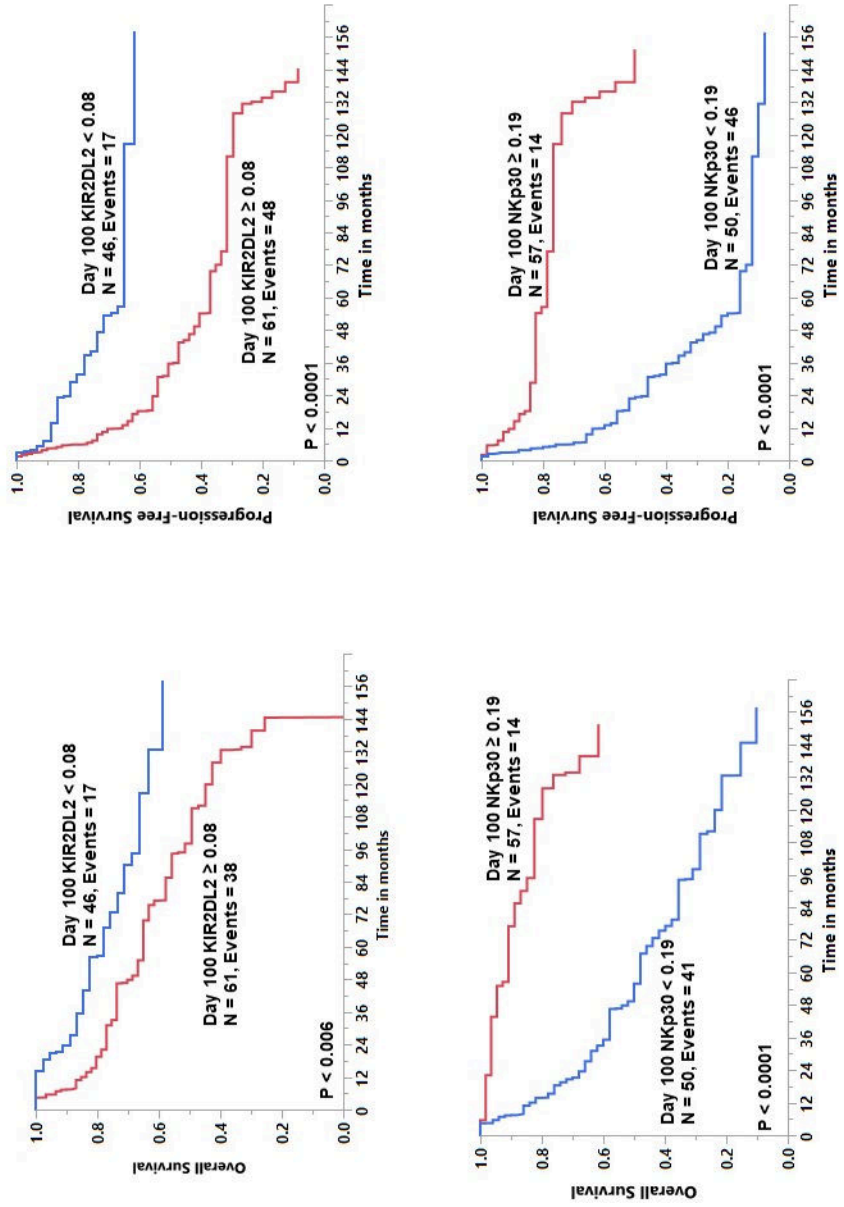

Figure 1

Figure 1