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# POSTER ABSTRACTS

## 613.ACUTE MYELOID LEUKEMIAS: CLINICAL AND EPIDEMIOLOGICAL

### Validation of ELN 2022 Risk Classification in Patients Diagnosed with AML Undergoing Allogeneic Hematopoietic Cell Transplantation

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Background:
In 2022, the European LeukemiaNet (ELN) updated their guidelines (Döhner H et al., *Blood* 2022) for risk allocation of patients with acute myeloid leukemia (AML) based on essential genetic features at diagnosis as defined in the newest classifications (Arber D et al., *Blood* 2022, Khoury JD et al., *Leukemia* 2022).
Methods:
Retrospective analysis of the 147 consecutive patients diagnosed with AML and available genetic information who underwent alloHCT in a complete morphological response (CR) between 2011 and 2021 in a single institution (HCB). Data was collected retrospectively and updated in July 2023. G-banding karyotype, FISH, qualitative and quantitative PCR and targeted Next Generation Sequencing were assessed at diagnosis to classify patients according to ELN 2022 risk classification. Our primary goal was to validate the ELN 2022 risk classification in patients undergoing alloHCT analyzing overall survival (OS). Secondary objectives were analyzing leukemia-free survival (LFS), 24-month cumulative incidence of relapse (CIR) and in the different molecular subgroups within the ELN2022 risk groups.
Results:
The main patient, disease-related and transplant characteristics are displayed in Figure 1. Overall, the median age was 52 years (range 18-70), 53.7% of the patients males, with 88% of the patients undergoing alloHCT in CR1. Twenty-two patients could not be classified through NGS assessment between 2011 and 2016 and included in the intermediate risk category due to normal karyotype and wildtype recurrent abnormalities measured by PCR. Patients in the adverse-risk group were older ($p < 0.001$) and underwent alloHCT less often with undetectable measurable residual disease ($p = 0.006$). Moreover, patients in the favorable or intermediate risk group underwent alloHCT more often in CR2 or CR3 ($p = 0.02$). In addition, alloHCT characteristics were similar for all the patients included.
With a 67-month median follow-up for LFS (95CI: 55-76), the median OS and LFS in patients classified into the favorable and intermediate risk groups were not reached (5-year OS and LFS rate in favorable risk group: 81% (95CI: 73-89) and 72% (95CI: 63-81). 5-year OS and LFS rate in intermediate risk group: 62% (95CI: 56-68) and 64% (95CI: 58-70). Patients included in the adverse risk group had an OS and LFS of 23.7 months (15.3-NR, $p < 0.001$ between intermediate and adverse risk. Figure 1B) and 15.2 months (5.79-NR, p=0.015) respectively, with a significant lower 5-year OS rate (40%, 95CI: 34-46), LFS rate (38%, 95CI: 32-44) and a higher CIR (18% in the favorable risk group (95%CI: 11-26) vs. 20% in the intermediate risk group (95%CI: 18-23) vs. 40% in the adverse risk group (95%CI: 38-44), $p = 0.024$).
Based on these results, a subanalysis was conducted in the patients classified into the adverse group. Those patients diagnosed with complex karyotype, inv(3), t(3;3), del(17p) and/or *TP53* mutated were reassessed into a new risk category group called: Adverse-Plus (AdvP).No different baseline characteristics between the AdvP patients and the other subgroups were

found. AdvP patients presented a shorter OS (NR in the rest of subgroups vs. 8.73 months in AdvP, $p < 0.001$ for AdvP vs. adverse risk. Figure 1C), LFS (NR in the rest of subgroups vs. 5.2 months, $p < 0.001$), and a higher CIR (62.5% in the AdvP group, $p < 0.001$ between adverse risk and AdvP). Interestingly, using this four-group classification including AdvP, the other risk groups presented similar OS, LFS, and CIR without statistical differences in between them

Summary/Conclussion:

ELN2022 risk classification discriminates properly accurate in patients undergoing alloHCT. Reclassifying AML adverse risk patients diagnosed with complex karyotype, inv(3), t(3;3), del(17p) and/or *TP53* mutated in a different subgroup should be considered due to a much worse prognosis after alloHCT, although it remains mandatory in first complete response.

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