



General AML

## Results from a CIBMTR study of patients with MLL-rearranged AML

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Translocations at chromosome 11q23 involving the MLL gene are present in 3%–4% of patients with acute myeloid leukemia (AML). Because adult cases of AML with 11q23 abnormalities are rare, there are a lack of studies evaluating the impact of these translocations on patient outcomes.<sup>1</sup> During the 2020 [Transplantation & Cellular Therapy \(TCT\) Meeting](#), [Kamal Menghrajani](#), [Memorial Sloan Kettering Cancer Center](#), New York, US, presented the results of a study by Center for International Blood and Marrow Transplant Research (CIBMTR) evaluating the impact of MLL-rearranged AML on post-transplant outcomes as compared to intermediate- and adverse-risk disease.<sup>2</sup>

### Methods<sup>2</sup>

- 8,709 adult patients with AML from the CIBMTR database were included
- Patients transplanted in first complete remission (CR1) were stratified by presence of 11q23 rearrangement, intermediate- or adverse-risk disease
- Relapse, non-relapse mortality (NRM), disease-free survival (DFS), and overall survival (OS) were analyzed
- Of the 8,709 eligible patients, 3,779 were selected based on disease and donor type, HSCT in CR1, and availability of data, of these:
  - 426 patients had an 11q23 translocation:
    - t(9;11): 26% (n = 112)
    - t(11;19): 15% (n = 62)
    - t(6;11): 10% (n = 41)
    - t(10;11): 7% (n = 28)
    - 11% (n = 47) had other translocation partners
    - For 32% (n = 136) no translocation partner was provided
  - 2,384 patients had intermediate-risk disease
  - 969 patients had adverse-risk disease

### Results<sup>2</sup>

- DFS was lowest in adverse-risk patients, hazard ratio (HR) for death:
  - adverse- risk, 1.47 (p < 0.001)
  - MLL, 1.26 (p = 0.002)

- OS was shorter for the MLL- and adverse-risk groups:
  - adverse-risk, HR = 1.45 (p < 0.001)
  - MLL, HR = 32 (p < 0.001)
- NRM was worse for patients with adverse-risk disease, with an HR of 1.17 (p = 0.05)
- Relapse risk was higher for adverse-risk patients:
  - adverse risk, HR = 1.71 (p < 0.001)
  - MLL, HR = 1.27 (p = 0.01)
- Relapse rates were similar for all translocation partners
- For patients with measurable residual disease (MRD)-positivity:
  - HR for relapse, 1.23 (p < 0.006)
  - For DFS, HR for death, 1.13 (p = 0.04)

### Conclusions<sup>2</sup>

In adult patients with MLL-rearranged AML, transplanted in CR1:

- DFS and OS are very similar to patients with adverse-risk disease
- MRD was a predictor of relapse and DFS, but not of NRM or OS
- All translocation partners showed very similar relapse rates

All together these results demonstrated that adult patients with MLL-rearranged AML had a poor outcome, similar to patients with adverse-risk disease. New therapeutic approaches are needed for this population.

### References

1. [Chen Y. et al.](#) Prognostic significance of 11q23 aberrations in adult acute myeloid leukemia and the role of allogeneic stem cell transplantation. *Leukemia*. 2013 Apr; 27(4):836–42. DOI: [10.1038/leu.2012.319](https://doi.org/10.1038/leu.2012.319)
2. [Menghrajani K. et al.](#) MLL-Rearranged AML Is Associated with Poor Outcomes As Compared to Patients with Intermediate- and Adverse-Risk Disease: A CIBMTR Study of 3779 Adult Patients. *Biol Blood Marrow Transplant*. 2020 Mar 01; 26(3):S10–S11. DOI: [10.1016/j.bbmt.2019.12.074](https://doi.org/10.1016/j.bbmt.2019.12.074)

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