



## The 65th ASH Annual Meeting Abstracts

## ONLINE PUBLICATION ONLY

## 721.ALLOGENEIC TRANSPLANTATION: CONDITIONING REGIMENS, ENGRAFTMENT AND ACUTE TOXICITIES

**Chidamide Combined with a Modified Bu-Cy Conditioning Regimen Improves Survival in Patients with T-Cell Acute Lymphoblastic Leukemia/Lymphoma Undergoing Allogeneic Hematopoietic Stem Cell Transplantation**

Xuanqi Cao<sup>1</sup>, Zheng Li<sup>2</sup>, Yanming Zhang, MD<sup>3</sup>, Qingya Cui<sup>4</sup>, Yunju Ma, MD<sup>1</sup>, Mengyun Li<sup>5</sup>, Sifan Chen<sup>5</sup>, Jia Yin, MDPhD<sup>1</sup>, Wei Cui<sup>2</sup>, Jia Chen<sup>1</sup>, Aining Sun<sup>1</sup>, Huiying Qiu<sup>2</sup>, Suning Chen, MD<sup>6</sup>, Zhengming Jin<sup>1</sup>, Xiaming Zhu<sup>2</sup>, De-Pei Wu<sup>1</sup>, Xiaowen Tang<sup>2</sup>

<sup>1</sup>National Clinical Research Center for Hematologic Diseases, The First Affiliated Hospital of Soochow University, Jiangsu Institute of Hematology, Institute of Blood and Marrow Transplantation, Collaborative Innovation Center of Hematology, Soochow University, Suzhou, China

<sup>2</sup>National Clinical Research Center for Hematologic Diseases, Jiangsu Institute of Hematology, The First Affiliated Hospital of Soochow University, Suzhou, China

<sup>3</sup>Department of Hematology, The Affiliated Huai'an Hospital of Xuzhou Medical University and The Second People's Hospital of Huai'an, Huai'an, China

<sup>4</sup>Institute of Blood and Marrow Transplantation, Collaborative Innovation Center of Hematology, Soochow University, Suzhou, China

<sup>5</sup>National Clinical Research Center for Hematologic Diseases, Jiangsu Institute of Hematology, The First Affiliated Hospital of Soochow University, Collaborative Innovation Center of Hematology, Soochow University, Suzhou, China

<sup>6</sup>National Clinical Research Center for Hematologic Diseases, Jiangsu Institute of Hematology, Institute of Blood and Marrow Transplantation, Collaborative Innovation Center of Hematology, The First Affiliated Hospital of Soochow University, Suzhou, China

**Backgrounds:** Allogeneic hematopoietic stem cell transplantation (allo-HSCT) is a potentially curative treatment for T-cell acute lymphoblastic leukemia/lymphoma (T-ALL/LBL). Relapse post-HSCT remains the major cause of mortality, highlighting the urgent need for more effective conditioning regimens in reducing relapse rates and improving outcomes for T-cell malignancy. Chidamide, as the first oral subtype-selective histone deacetylase inhibitor (HDACi) approved in China, can lead to a more relaxed chromatin structure through chromatin remodeling, particularly hyperacetylation of lysine residues in the histone tails, which facilitates the expression of tumor suppressor genes as well as the action of alkylating agents busulfan. To date, the role of chidamide in T-ALL/LBL conditioning regimens in allo-HSCT has not been explored.

**Methods:** We retrospectively compared the clinical efficacy and safety between chidamide combined with a modified Busulfan-Cyclophosphamide (mBuCy) and mBuCy conditioning regimen for T-ALL/LBL patients undergoing allo-HSCT. The chidamide combined with mBuCy regimen was presented in Figure 1.

**Results:** Twenty-two patients received chidamide combined with mBuCy conditioning regimen (Chi group). A matched-pair control (CON) group of 44 patients (matched 1:2) received mBuCy only. The median follow-up time was 683 (range 296-1168) days. Patients in the Chi group showed better 2-year overall survival (OS) and leukemia-free survival (LFS) (85.4 vs. 52.9%, respectively,  $P = 0.021$ ; 69.1 vs. 42.9%, respectively,  $P = 0.031$ ). Multivariate analysis showed that chidamide combined with mBuCy was a major positive risk factor for OS (HR 0.18, 95%CI, 0.05-0.63;  $P = 0.007$ ) and LFS (HR 0.32; 95%CI, 0.13-0.80;  $P = 0.015$ ). The cumulative incidence rates of grade II-IV and grade III-IV aGVHD were similar (36.4 vs. 38.6%, respectively,  $P = 0.858$ ; 13.6 vs. 20.5%, respectively,  $P = 0.735$ ). Patients in the Chi group showed higher incidence of elevated  $\gamma$ -glutamyltransferase and hemorrhagic cystitis than that in the mBuCy group (90.9 vs. 65.9%, respectively,  $P = 0.029$ ; 36.4 vs. 13.6%, respectively,  $P = 0.007$ ). No transplantation-related mortality was documented within the first 100 days after transplantation.

**Conclusions:** Our data demonstrate that the conditioning regimen containing chidamide improves the survival of T-ALL/LBL patients without increasing the incidence of transplant-related mortality. A prospective clinical trial is expected to confirm these findings.

**Disclosures** No relevant conflicts of interest to declare.

Haploidentical donors

Drug	Dosage	Time before stem cell infusion														
		-14d	-13d	-12d	-11d	-10d	-9d	-8d	-7d	-6d	-5d	-4d	-3d	-2d	-1d	0d
Chidamide	15mg/d orally	√		√			√		√		√					
Me-CCNU	250 mg/m <sup>2</sup> /d orally			√												
Cytarabine	2 g/m <sup>2</sup> q12h i.v.				√	√										
Busulfan	0.8 mg/kg q6h i.v.						√	√	√							
Cyclophosphamide	1.8g/m <sup>2</sup> /d i.v.										√	√				
Stem Cell																√

HLA-matched siblings or unrelated donors

Drug	Dosage	Time before stem cell infusion														
		-14d	-13d	-12d	-11d	-10d	-9d	-8d	-7d	-6d	-5d	-4d	-3d	-2d	-1d	0d
Chidamide	15mg/d orally				√		√		√		√					
Me-CCNU	250 mg/m <sup>2</sup> /d orally				√											
Cytarabine	2 g/m <sup>2</sup> qd i.v.					√										
Busulfan	0.8 mg/kg q6h i.v.						√	√	√							
Cyclophosphamide	1.8g/m <sup>2</sup> /d i.v.										√	√				
Stem Cell																√

Figure 1

<https://doi.org/10.1182/blood-2023-185258>