Abstract: P602

Title: REAL-WORLD OUTCOMES OF MITOXANTRONE HYDROCHLORIDE LIPOSOME REGIMEN FOR ACUTE MYELOID LEUKEMIA: A SHORT-TERM ANALYSIS OF EFFICACY AND SAFETY

Abstract Type: Poster Presentation

Topic: Acute myeloid leukemia - Clinical

Background:

Acute myeloid leukemia (AML) is a highly aggressive hematologic malignancy with a poor prognosis. The '3+7' regimen, combining anthracyclines with cytarabine, remains the standard treatment for newly diagnosed (ND) AML. However, ongoing clinical research is exploring to combine the third drugs with '3+7' regimen to further enhance effectiveness. For patients with relapsed or refractory (R/R) AML, there is currently no established standard treatment. Mitoxantrone hydrochloride liposome (PLM60) is a novel nano-drug that has promising pharmacokinetic properties and prolonged survival in animal studies compared to conventional mitoxantrone. Several studies have validated the anti-tumor effects of PLM60 in AML. This article provides an update on the latest data in the real-world application of PLM60 for AML.

Aims:

To comprehend the practical application of PLM60 and evaluate its safety and effectiveness in AML clinical practice.

Methods:

This was a multi-center, non-interventional and ambispective cohort real-world study (ChiCTR2200067172). Adult patients with confirmed ND AML and R/R AML according to the 2016 WHO criteria except acute promyelocytic leukemia (APL) were enrolled. For the retrospective cohort, treatment with at least one cycle of PLM60 regimen was required. The primary endpoint was composite complete remission rate (CRc), and the secondary endpoints were overall remission rate (ORR), relapse-free survival (RFS), overall survival (OS) and safety.

Results:

As of 21 February, 2024, we analyzed 239 eligible AML patients (median age was 47 years,51.5% for male) who received PLM60 regimen between January 2022 and November 2023. There were 211 (92.5%) patients of de novo AML and 17 (7.1%) patients of secondary AML. Cytogenetic and molecular examination results were available in 79.1% patients, in which FLT3 was the most commonly mutated gene of 12.1%. The median dose of PLM60 was 19.0 (range 5.9-33.8) mg/m2.

Among 117 ND patients, the overall CRc rate was 84.6% (99/117) and ORR was 91.5% (107/117), while the CRc rate and ORR after induction therapy was 75.6% (34/45) and 88.9%(40/45), respectively.. Among 122 R/R pts, the overall CRc rate was 45.1% (55/122), ORR was 55.7% (68/122), while CRc rate and ORR after induction therapy was 41.6% (42/101) and 54.5% (55/101), respectively. MA (PLM60+cytarabine) regimen was the most common regimen of induction therapy, with a CRc rate of 86.7% (26/30) and ORR of 93.3% (28/30) in ND patients, while a CRc rate of 54.5% (18/33) and ORR of 63.6% (21/33) in R/R patients. Other promising induced regimens including FL/CLAG-M (fludarabine/cladribine+MA+G-CSF) in R/R patients (CRc/ORR 62.5% (5/8)) and MAV (MA+venetoclax) in both ND (CRc/ORR 100%(5/5)) and R/R (CRc 62.5%(5/8), ORR 75%(6/8)) patients. Other efficacy indicators such as RFS and OS will be reported after a long-term follow-up.

The hematological grade 3/4 TRAEs including thrombocytopenia (64.4%), leukopenia (63.6%), neutropenia (60.7%) and anemia (48.5%). The most common non-hematological grade 3/4 TRAEs were pulmonary infection (5.9%). The overall safety was acceptable and manageable.

Summary/Conclusion:

The PLM60 regimen had an encouraging efficacy and showed a manageable safety profile in AML patients. More effective regimens are worthy of further exploration and verification.

Table 1. Patients clinical characteristics.

Characteristic	All (N=239)	Newly diagnosed (n=117)	R/R (n=122)
Medium age (range), years	47.0(18,84)	45.0(18,74)	51.0(19,84)
Male, n(%)	123(51.5)	61(52.1)	62(50.8)
Disease status, n(%)			
Refractory	-	-	54(22.6)
1 course of induction therapy			25
more than 2 courses of induction therapy			26
unknown			3
Relapsed	-	-	68(28.5)
CR1 within 6 months			24
CR1 out of 6 months			29
unknown			15
Treatment phase, n(%)			
Induction therapy	146(61.1)	45(38.5)	101(82.8)
Consolidation therapy	88(36.8)	71(60.7)	17(13.9)
Transplantation conditioning	4(1.7)	1(0.9)	3(2.5)
Unknown	1(0.4)	0(0.0)	1(0.8)
Molecular mutations, n(%)	130(54.4)	61(52.1)	69(56.6)
FLT3	29(12.1)	14(12.0)	15(12.3)
CEBPA	19(7.9)	7(6.0)	12(9.8)
ASXL1	13(5.4)	6(5.1)	7(5.7)
NMP1	12(5.0)	5(4.3)	7(5.7)
TP53	10(4.2)	6(5.1)	4(3.3)
Others	47(19.7)	23(19.6)	24(19.7)
Cytogenetic abnormality, n(%)	53(22.2)	25(21.4)	28(23.0)
RUNX1::RUNX1T1	16(6.7)	7(6.0)	17(13.9)
CBFB::MYH11	8(3.3)	6(5.1)	9(7.4)
Others	29(12.1)	12(10.3)	2(1.6)

Table 2. The overall optimun efficacy results.

Efficacy,N(%)	All (N=239)	Newly diagnosed (n=117)	R/R (n=122)
CR	112(46.9)	79(67.5)	33(27.0)
CRi	42(17.6)	20(17.1)	22(18.0)
PR	20(8.4)	8(6.8)	12(9.8)
NR	63(26.4)	9(7.7)	54(44.3)
ORR	175(73.2)	107(91.5)	68(55.7)
95%CI	67.1%-78.7%	84.8%-95.8%	46.5%-64.7%
CRr	154(64.4)	99(84.6)	55(45.1)
95%CI	58.0%-70.5%	76.8%-90.6%	36.1%-54.3%

Table 3. Treatment-related adverse events.

TRAEs,N(%)	N=239			
	Grade I	Grade II	Grade III	Grade IV
Leukopenia	4(1.7)	18(7.5)	21(8.8)	131(54.8)
Thrombocytopenia	5(2.1)	12(5.0)	15(6.3)	139(58.2)
Neutropenia	5(2.1)	9(3.8)	10(4.2)	135(56.5)
Anemia	5(2.1)	26(10.9)	101(42.3)	15(6.3)
Febrile neutropenia	0(0.0)	0(0.0)	12(5.0)	4(1.7)
Fever	30(12.6)	19(7.9)	1(0.4)	0(0.0)
Nausea	21(8.8)	4(1.7)	1(0.4)	0(0.0)
ALT increased	18(7.5)	3(1.3)	3(1.3)	0(0.0)
AST increased	17(7.1)	1(0.4)	4(1.7)	0(0.0)
Pulmonary infection	0(0.0)	3(1.3)	14(5.9)	0(0.0)

Keywords: Acute myeloid leukemia, Chemotherapy, Hematological malignancy