Induction mortality (IM) of Acute Myeloid leukemia (AML) patients treated with purine analogues-cytarabine-anthracycline at a general hospital.

Adan Rios1, Binoy Yohannan1,Frances Cervoni-Curet1.
1. Division of Hematology/Oncology.
Center at Houston McGovern Medical School, The University of Health Science .

Abstract

We reviewed AML IM rate in patients induced with (fludarabine/cladribine) combined with cytarabine and idarubicin (FIA/CLIA) at Memorial Hermann Hospital, Texas Medical Center (MHH at TMC). FIA/CLIA has a higher CR rate (70–80%) than '3+7' (historically 60%). Given the fact that in AML achieving a CR is the most important factor to improve survival with adequate treatment expertise triplet IC regimen can be safely administered with a low induction mortality and superior results.

BACKGROUND

Cytarabine-anthracyclines (7+3) induction chemotherapy (IC)) has been the mainstay therapy for over four decades and it remains the standard AML IC regimen internationally. Triplet IC using purine analogues (fludarabine/cladribine) in combination with cytarabine and idarubicin (FIA/CLIA) is superior to the standard 7+3 regimen but challenging to administer in general hospital settings due to myelosuppression.

Material and Methods

Of 44 AML reviewed records from January 2013 to January 2022, 40 received 5 days FIA/CLIA IC and four 3-4 days due to age and comorbidities.

RESULTS:

Median age was 51.5 years (range: 18-68). Three patients died before assessment. After 1 cycle the composite CR (CR+ CRi) was 82.9% (34/41) and 87.8% (36/41) after 2 cycles.

MRD negative composite CR was 92%. Four patients had adverse risk cytogenetics and primary induction failure (modified FIA). 37% had febrile neutropenia. 25% had bacteremia and 15% required ICU admission and 4% mechanical ventilation. The 30-day induction mortality was 9%.

Materials & Methods

PATIENTS CLINICAL CHARACTERISTICS:

Age (years)	Median -51.5	Range: 18-68	%
Gender	Male	25	56
	Female	19	44
Race	Caucasian	17	38
	African American	9	20
	Hispanic	13	29
	Asian	5	11
ECOG PS	0	15	34
	1	16	36
	2	13	29
ELN Risk stratification	Favorable	12	27
	Intermediate	16	36
	Adverse	16	36
Molecular Characteristics	FLT3 (ITD/TKD)	12	27
	NPM1	13	29
	CEBPA	2	4
	IDH1	4	9
	IDH 2	1	2
	ASXL1	1	2
	RUNX1	2	4
	BCR-ABL1	3	6
	Core binding factor (CBF)	4	9
Disease origin	De novo	36	81
	Therapy related	1	2
	MDS	3	6
	Transformed from MPN	2	4
	Myeloid sarcoma	2	4

Conclusion

We have a higher number of young patients with AML in our institution due to significant health insurance changes and demographics. We needed to decide a systematic approach to our patients that would offer the best possible outcomes. Convinced by the data published that a dose-intensive regimen such as FLAG-Ida offered our patients a better opportunity for survival we assembled a dedicated core team of physicians and nurses together with the assistance of the Infectious Diseases specialists and Intensivists. We believe that this data confirms and shows that such change from a lesser effective therapy 'standard of care' of 3+7 IC can be safely achieved and implemented in a general hospital.

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