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ELEVENTH ANNUAL MEETING

IMPROVED OUTCOMES OF ACUTE LYMPHOBLASTIC LEUKAEMIA (ALL) IN ADOLESCENT AND YOUNG ADULTS (AYA) TREATED WITH *MODIFIED* COG0232, A PAEDIATRIC INSPIRED INTENSIVE REGIMEN

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INTRODUCTION

- **Outcome of AYA ALL has improved with pediatric inspired regimens.**
- **High induction mortality due to infective and non-infective complications still poses a challenge in low and middle income countries(LMIC).**

AIM

Evaluate outcome (Overall survival, Event free survival, Relapse free survival) and factors affecting long term survival in AYA ALL treated with modified Children Oncology Group-0232 protocol

METHOD

- Ambispective study comprising **132 patients** of AYA ALL treated from **2016 to 2021**
- COG0232 induction was modified and **steroids (@60mg/m2)** were given on alternate weeks for a total two weeks duration instead of standard four weeks.(**to reduce induction mortality** from infective and non-infective complications)
- **Factors analyzed** were: age, gender, WBC counts, blast percentage, subtype of ALL, CNS disease, cytogenetics, end-of-induction(EOI) measurable residual disease (MRD).
- Patients were stratified into **Ph-positive ALL**, **high-risk(HR) ALL**(MLL rearrangement, TP53 mutated, complex cytogenetics, hypodiploidy, EOI MRD ≥ 0.01) and **standard-risk(SR) ALL**

RESULTS

- The **median age** was 24yrs (range:15-40yrs)
- **Five(3.7%) patients had induction mortality. .**
- **On univariate analysis**, Only **risk stratification** [HR=2,p=0.005; HR=3.8,p=0.019 and HR=2.5,p=0.03 for EFS,OS and RFS respectively] and **positive EOI MRD** [HR=2.6,p=0.019 and HR=3.6, p=0.03 for EFS and OS respectively] **were found to significantly affect survival .**
- At median f/u of 30months **OS, EFS and RFS were 82.5%, 65.3% and 75.3%(p=0.01)** respectively for entire cohort.
- **OS** at median follow up of 30months for **SR-ALL was 84.5%, Ph-positive ALL was 95.5% and HR-ALL was 71.4%%**. (Log rank P=0.34)
- **RFS** at median follow up of 30months **for SR-ALL was 82.4%, Ph-positive ALL was 76.1% and HR-ALL was 76.1%.** (Log rank P=0.08)

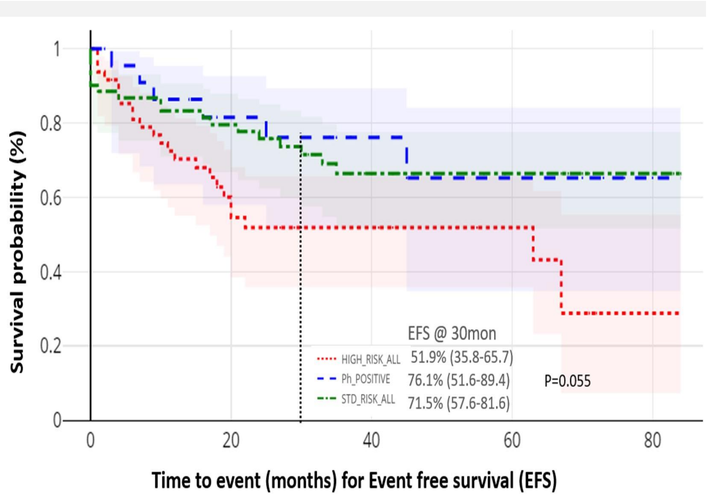


Figure: Showing Event free survival(EFS) as per different risk class

PARAMETERS	N(%)
Male / Female	107(81) / 25 (19)
Risk class	
Standard Risk ALL	61(46.2)
Ph+ve ALL	23(17.4%)
High risk ALL	48(36.4)
Induction refractory	8(6)
Alllogenic SCT	
CR1	17 (12.8%)
CR2	6(4.5)
Post Induction MRD	
Positive	33 (39.8)
Negative	50 (60.2)
Causes of Induction delay	
Febrile neutropenia	28(59.6)
Colitis/Typhlitis	12(25.5)
IFI	8(17)
Liver Dysfunction	8(17)

CONCLUSIONS

- Modified COG0232 protocol significantly improved survival outcomes by reducing early induction mortality and therapy related complications.
- Early identification and treatment intensification with immunotherapy may further improve long term outcomes in HR-ALL patients.

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