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Comparable Outcomes of Relapsed Acute Lymphoblastic Leukemia in Adolescents and Young Adults (AYA) Treated With Pediatric-Inspired Chemotherapy (R3 Protocol) Versus Adult-Based Salvage (FA) Protocol

C. Ben Lamine[1], M. Alshehri[1], L. Samhan[2], M. Hassan[1], T. Alhassan[1], R. Elfakih[1], F. Alfraih[1], S. O. Ahmed[1], A. Hanbali[1]

1.King Faisal Specialist Hospital and Research Center, Riyadh, Saudi Arabia

2.Al Faisal University, Riyadh, Saudi Arabia

مستشفى الملك فيصل التخصصي ومركز الأبحاث
King Faisal Specialist Hospital & Research Center
Gen.Org. مؤسسة عامة

INTRODUCTION

- the survival rate of (AYA) with (ALL) improved by using pediatric-based treatment protocols.
- Relapsed patients : poor outcomes with adult chemotherapy salvage regimens (high doses of Ara-C) OS 10%.
- Salvage treatment with blinatumomab for adults with relapsed B-cell ALL results in a (CR) rate of 34%, a median survival of 7.7 months, and an (OS) of less than 30% at 18 months.
- ALLR3 for relapsed patients (<18 years): CR 97% /OS 72%.

AIM

to compare the outcomes of AYA patients treated with a pediatric-inspired regimen (R3 protocol) to those treated with an adult-based regimen (FA [fludarabine/cytarabine] protocol).

METHOD

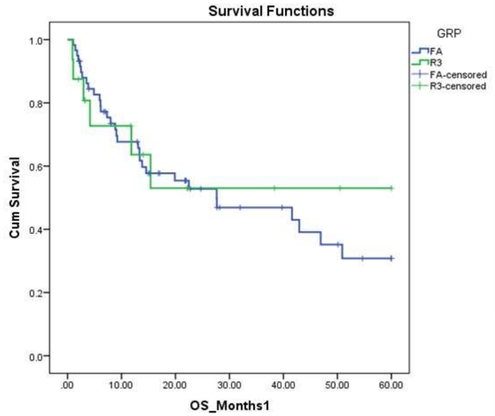
17 AYA patients with relapsed Philadelphia-negative ALL, aged 14 to 40 years, treated with the R3 protocol, were compared with **60 patients** treated with the FA protocol. Patients achieving CR underwent allogeneic stem cell transplant (allo-SCT). Patients' characteristics, response rates, and OS were analyzed.

RESULTS

- The 2 arms had comparable characteristics. The overall CR rate was 60% at the end of R3 induction, with negative MRD ($<10^{-4}$ cells) in 47.1% of patients.
- The overall CR rate was higher in the FA arm (76.3%), (*P*=0.1).
- Refractory to subsequent salvage therapy in 42% of cases in both arms.
- 50 % who responded to R3 proceeded to allo-SCT (52.3%), while 78% of the patients in the FA arm underwent transplantation.
- At a median follow-up of 4 years, OS was 53% in the R3 arm compared to 30.8% in the FA arm, (*P*=0.8).

	R3 protocol	FA protocol
B-cell ALL	88.2%	92.2%
median age	16 years (range: 14-40 years)	22 years (range: 18-32 years)
CNS involvement	28.8%	17.6%
Late Relapse	41%	25.2%
CR	60%	76.3%
Allogeneic stem cell transplant	52.3%	78%
OS	53%	30.8% p=0.8

	R3 protocol	FA protocol
Disease relapse	6	21
Infection	1	8
Other cancer	1	0
GVHD	0	2
Total deaths	8	31



CONCLUSIONS

Pediatric-inspired protocols, while beneficial in the front-line setting for ALL in the AYA population, **did not show a significant difference in outcomes** compared to traditional adult-based salvage chemotherapy regimens in relapsed disease.

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CONTACT INFORMATION

Dr Chokri Ben Lamine:
bcben@kfshrc.edu.sa

Dr Amr Hanbali: *ahanbali@kfshrc.edu.sa*