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BREAKING BARRIERS: PEGASPARGASE THERAPY IN ADOLESCENT AND YOUNG ADULT POPULATION AGES (14-55 YEARS) DIAGNOSED WITH ACUTE LYMPHOBLASTIC LEUKEMIA – EVIDENCE FROM A SINGLE-CENTER STUDY

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INTRODUCTION

- Pegaspargase (PegAsp) is a critical component in the treatment of acute lymphoblastic leukemia (ALL).
- While PegAsp is more commonly studied and used in pediatric patients with ALL, it is also utilized in adults with ALL.
- Data on the **efficacy** and **tolerability** of **PegAsp** in **adolescent and young adult (AYA)** populations are scarce.

AIM

- Evaluates the **efficacy** and **tolerability** of PegAsp in AYA patients, based on a single-center experience.

METHOD

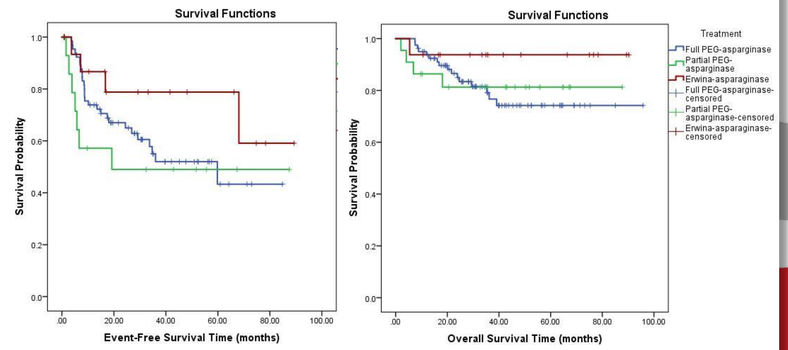
- **Retrospective** review of **119 AYA** patients with ALL (ages range 14-51) treated with PegAsp between 2015 and 2023.
- Event-free survival (EFS), disease-free survival (DFS), overall survival (OS), and response rate, were analyzed using cumulative incident and Kaplan-Meier methods.
- Compare patients who fully completed PegAsp regimen vs patients were switched to Erwinia asparaginase vs patients who received it partially.

RESULTS

- The cohort included patients with high-risk (70.8%) and very high-risk (29.2%) profiles, with 74% having B-ALL and 26% having T-ALL.
- CNS involvement was present in 9% of cases.
- PegAsp regimen was fully completed in 67.2% of patients, 14.3% were switched to Erwinia asparaginase, and 18.5% of patients received it partially.
- For patients who received full PegAsp, the OS, EFS and DFS were 74%, 43%, and 64%, respectively.
- For patients who received partial PegAsp, OS, EFS and DFS were 81%, 49%, and 79%, respectively.
- The OS was 93.8% for those who switched to Erwinia in the consolidation phase, with a non-significant p-value of 0.2.
- There was **no reported** PegAsp-related **mortality** in our cohort.

	Induction Phase	Consolidation Phase
Acute pancreatitis	5 (4%)	1 (1%)
Transaminitis	76 (70.3%)	83 (79%)
Hiperbilirrubinemia	69 (64%)	54 (51.5%)
Allergic reaction	5 (4.7%)	34 (32.5%)
Thrombosis	14 (13%)	5 (4.9)

Table 1: Most common observed adverse effects of Pegaspargase during induction and consolidation phase of AYA protocol



CONCLUSIONS

- Our findings suggest that with appropriate monitoring and management of side effects, **PegAsp** is an **effective**, **tolerable**, and **safe** treatment option for **AYA patients with ALL**.
- Further randomized trials in AYA population are warranted to validate these findings and optimize supportive care strategies.

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