# The Prognostic Role of Day 15 Minimal Residual Disease in Pediatric Acute Lymphoblastic Leukemia: A Single-Center Experience

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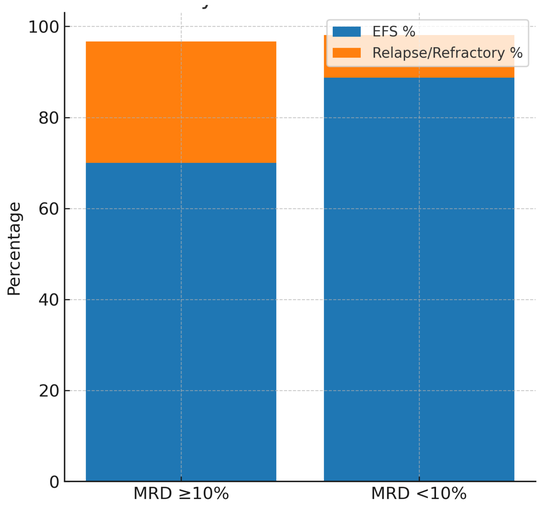
Yerevan State Medical University after Mkhitar Heratsi

## Background

Minimal residual disease (MRD) is a key prognostic biomarker in pediatric ALL. Day 15 MRD integration into risk-adapted therapy varies across protocols. This study aimed to evaluate the prognostic significance of Day 15 MRD in pediatric ALL patients treated at a national referral center using ALL-IC BFM 2009.

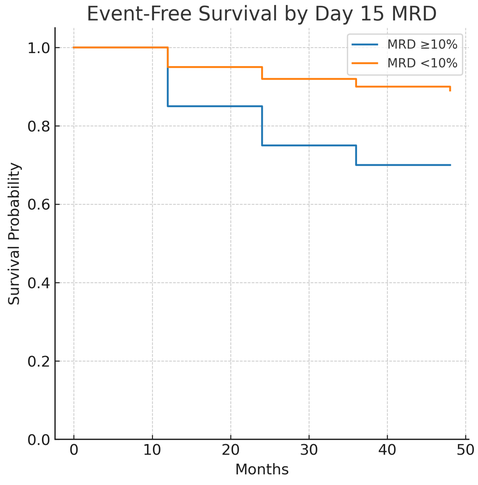
## Methods

- Retrospective study, 2020–2023
- ALL-IC BFM 2009 protocol
- MRD assessed by multiparameter flow cytometry
  - Day 15: ≥10% vs <10%
  - Day 33: ≥1% vs <1%
- Outcomes: Event-free survival (EFS), relapse/refractory rates




## Results

- 106 diagnosed → 98 evaluable
  - SR: 4.1%, IR: 56.1%, HR: 39.8%
- Day 15 MRD ≥10% (33.3%)
  - 26.7% relapse/refractory, 70% EFS
- Day 15 MRD <10% (66.7%)
  - 9.4% relapse/refractory, 88.7% EFS
- HR + Day 15 MRD <10% → intermediate outcomes
- Day 33 MRD ≥1% (all had Day 15 MRD >10%) → 55.6% relapsed/died




## Conclusion

- **Day 15 MRD is a critical prognostic indicator in pediatric ALL.**
- **Patients with Day 15 MRD ≥10% remain at high risk of relapse.**
- **HR patients with Day 15 MRD <10% have outcomes closer to SR/IR.**
- **Day 15 MRD must be included in risk stratification algorithms.**