OUTCOMES OF A GRADUATED INTENSITY TREATMENT FORACUTE LYMPHOPLASTIC LEUKEMIA (ALL) AT BUTARO CANCER CENTER OF EXCELLENCE IN RWANDA

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Introduction

While over 85% of children with Acute Lymphoblastic Leukemia (ALL) can be cured in developed countries, outcomes in developing countries are inferior.[2-5] At Butaro Cancer Center of Excellence, a public, rural-based Rwandan hospital, patients were treated using a graduated intensity protocol as outlined by Hunger (2009).

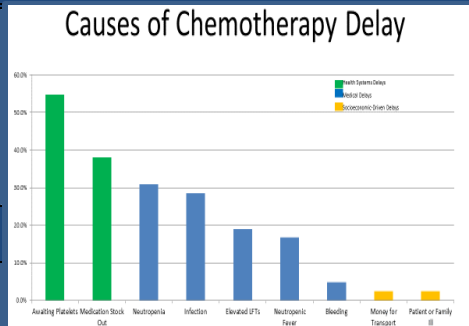
Materials and Methods

- Between July 1, 2012 and June 30, 2014, 42 consecutively recruited patients with pathologically-confirmed treatment-naive ALL were started on level 1 of the Hunger protocol, the same low-intensity regimen for all risk stratifications.
- Demographics, determinants of delay and prognostic outcomes were collected through December 31, 2014.

Results

- Median age of 42 patients was 10.0 (range 0.4 - 40.4 years).
- At the end of analysis, 28.6%(12) patients were alive without evidence of relapse and continuing treatment, 66.7%(28) had died, and 4.8%(2) were lost to follow up.
- Twenty-three (82.1%) of the deaths were disease-related, 1(3.6%) treatment-related, and 4(14.3%) unclear.
- Deaths largely clustered within two months or 6 months following diagnosis, the latter during early maintenance.
- The most common cause of chemotherapy delay was thrombocytopenia (21 patients, 50.0%).
- Prior to induction, 52.4%(22) of patients required blood and 42.9%(18) platelet transfusions. Medication stock outs affected care of 16 patients (38.1%). Socioeconomic delays were infrequent (1 lack of transport, 1 illness of the patient or family member).

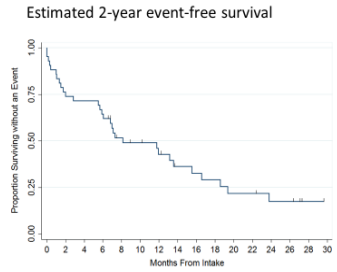
Results



Outcomes

		N	%	Median (IQR)
Patient Number		42		
Status	Alive, Continuing Treatment	12	28.57%	
	Deceased^	28	66.67%	
	LTFU^^	2	4.76%	
Alive	Total	12		
	Treatment Duration*			387 (243 - 800.5) days
Causes of Death	Disease-related	23		
	Relapsed	14		
	Refractory	7		
	Prior to Treatment	2		
	Treatment-related	1		
	Unclear**	4		

^ Relapsed patients categorized under deceased, ^^ LTFU defined as missed most recent appointment: LTFU occurred for both patients during maintenance, * Treatment duration calculated from intake until December 31, 2014 (end of analysis period), **Unclear deaths often occurred once patient started treatment but not due to relapse or refractory disease.



Conclusions

In this first published outcomes of the graduated intensity approach to ALL in resource-constrained settings, the majority of failures were relapses as expected given the low intensity of regimen 1. However, treatment-related deaths were acceptably low with one clear case. Many patients still required transfusional support. We are now risk-stratifying patients and advancing to regimen 2 for high-risk patients following an intensive educational program for providers. These results point to the necessity of risk-stratifying and a data-driven approach to care for complex patients in resource-constrained settings

References

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