Outcome Predictors of Childhood Burkitt's lymphoma; A developing Country Experience

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Background

The outcome of childhood Burkitt's lymphoma (BL) has improved remarkably over the past decade because of the development of risk-adapted multi-agent chemotherapeutic regimens

The identification of prognostic variables is of major importance in stratification of the patient to risk groups and giving the more effective risk adapted therapy

Objective

This study aimed to assess the outcome predictors of BL in children and adolescents

Materials & Methods

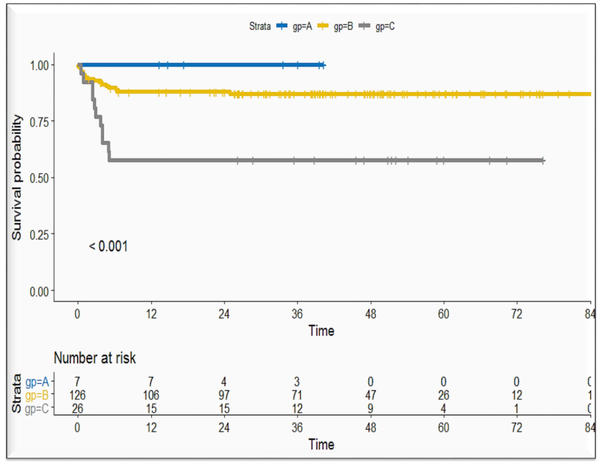
A retrospective study included all patients ≤18 years old diagnosed with BL and treated according to the modified LMB 96 protocol at National Cancer Institute, Cairo University from January 2012 to December 2016. The LMB96 study identified three risk groups: group A (resected stage I and abdominal stage II), group B (not eligible for A or C) and group C (stages IV and any CNS involvement and/or bone marrow involvement ≥ 25% blasts)

	No.	No of deaths	5-year OS (%)	P-value	No of events	5-year EFS (%)	P-value
Whole group	170	27	82.9%		27	82.8%	
Gender							
Male	118	21	82.0%		21	81.9%	
Female	41	6	85.3%	0.590	6	85.3%	0.622
Stage							
I-II	24	0	100%		0	100%	
III	117	19	83.6%		19	83.6%	
IV	18	8	55.6%	<0.001	8	55.6%	<0.001
Group							
A	7	0	100%		0	100%	
B	126	18	87.2%		18	87.1%	
C	26	14	57.7%	<0.001	14	57.7%	<0.001
Bone marrow							
<25%	153	24	84.2%		24	84.1%	
≥25%	6	3	50.0%	0.026	3	50.0%	0.021
CNS							
Negative	149	21	85.8%		21	85.7%	
Positive	10	6	40.0%	<0.001	6	40.0%	<0.001

OS and EFS in relation to initial patients' and disease characteristics

Results

A total of 170 patients were diagnosed with BL, with median age of 5 years old. Abdomen was the most common primary site (90.0%). Bone marrow involvement was encountered in 12 patients (7%) and 10 (6%) had central nervous system (CNS) disease at presentation. From the whole study cohort, 7 patients (4.1%) were treated as group A, 130 (76.5%) as group B, and 27 (15.9%) patients as group C. The 5- years overall survival (OS) and event free survival (EFS) were 82.9% and 82.8% respectively for the whole group.



OS and EFS were 100%, 87.2% and 57.7% for group A, B and C respectively (P<0.001). BM and/or CNS involvement were associated with significantly worse outcome (50% for BM+ve vs 84.2% for BM-ve P= 0.026) and (40% for CNS+ve vs 85.8% for CNS-ve P<0.001). Early initiation of induction cycle in a period ≤ 10 days of CVP start was associated with better outcome 87.3% vs 68.6% for delayed group >10 days (P=0.020)

Conclusions

Outcome of BL was significantly affected by disease group, BM and/or CNS involvement and early initiation of induction therapy

References

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