Impact of corticosteroid pretreatment in pediatric patients with newly diagnosed B-lymphoblastic leukemia: a report from the Children's Oncology Group

Elizabeth A. Raetz,[1] Mignon L. Loh,[2] Meenakshi Devidas,[3] Kelly Maloney,[4] Leonard A. Mattano Jr.,[5] Eric Larsen,[6] Andrew Carroll,[7] Nyla A. Heerema,[8] Julie M. Gastier-Foster,[9] Brent Wood,[10] Michael J. Borowitz,[11] Naomi Winick,[12] Stephen P. Hunger[13] and William L. Carroll[1]

[1]Department of Pediatrics and Perlmutter Cancer Center, NYU Langone Health, New York, NY; [2]Department of Pediatrics, Benioff Children's Hospital, and the Helen Diller Family Comprehensive Cancer Center, University of California, San Francisco, CA; [3]Department of Biostatistics, Colleges of Medicine, Public Health and Health Professions, University of Florida, Gainesville, FL; [4]Department of Pediatrics University of Colorado School of Medicine and Children's Hospital Colorado, Aurora, CO; [5]HARP Pharma Consulting, Mystic, CT; [6]Department of Pediatrics, Maine Children's Cancer Program, Scarborough, ME; [7]Department of Genetics, University of Alabama at Birmingham, Birmingham, AL; [8]Department of Pathology, Wexner Medical Center, Ohio State University, Columbus, OH; [9]Institute for Genomic Medicine, Nationwide Children's Hospital and Departments of Pathology and Pediatrics, Ohio State University College of Medicine, Columbus, OH; [10]Departments of Pathology and Medicine, University of Washington, Seattle, WA; [11]Departments of Pathology and Oncology, Johns Hopkins Medical Institutions, Baltimore, MD; [12]Departments of Pediatrics, UT Southwestern, Dallas, TX and [13]Department of Pediatrics and the Center for Childhood Cancer Research, Children's Hospital of Philadelphia and Perelman School of Medicine at the University of Pennsylvania, PA, USA

Correspondence: ELIZABETH A. RAETZ - elizabeth.raetz@nyulangone.org

SUPPLEMENTAL DATA

Table S1. Early Treatment Response

	Not Steroid Pretreated N=7542	Steroid Pretreated N=247	*P*-value
End Induction Remission*			
AALL0331	99.1% (4910/4954)	97.4% (75/77)	0.16
AALL0232	95.2% (2398/2520)	95.8% (158/165)	0.73
Day 29 MRD <0.1%			
AALL0331	92.0% (4547/4943)	87.0% (67/77)	0.11
AALL0232	83.9% (2105/2509)	84.9% (141/166)	0.72
Day 29 MRD <0.01%			
AALL0331	81.6% (4033/4943)	74.0% (57/77)	0.09
AALL0232	73.1% (1833/2509)	70.5% (117/166)	0.47
Rapid Early Response			
AALL0331	87.4% (4319/4944)	85.5% (65/76)	0.63
AALL0232	80.0% (2007/2510)	80.9% (131/162)	0.78

* M1 marrow (<5% blasts) on Day 29.
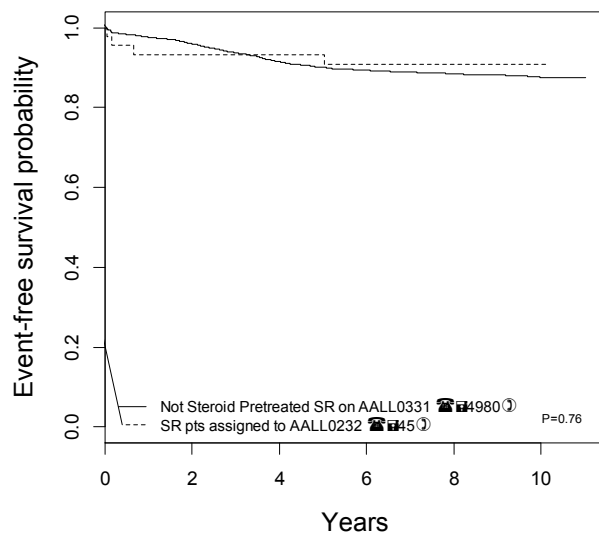
Table S2. Cox Regression Analysis

Analysis of Maximum Likelihood Estimates				
Factor	*P*-value	Hazard Ratio	95% Hazard Ratio Confidence Limits	
NCI Risk Group	<0.0001	2.17	1.93	2.45
MRD Day 29 (0.1%)	<0.0001	2.18	1.82	2.60
MRD Day 29 (0.01%)	<0.0001	2.46	2.08	2.91
Steroid Pretreatment	0.70	1.06	0.78	1.44

Figure Legends

Supplemental Figure 1. Outcomes for standard risk patients allocated to a high risk therapy. Five-year event-free (EFS) and overall survival (OS) are shown in corticosteroid pretreated vs. not pretreated patients. A) EFS; B) OS for NCI SR patients assigned to COG AALL0232 due to selected patterns of corticosteroid exposure prior to diagnosis; namely, corticosteroid exposure in the week preceding diagnosis in the absence of a pre-steroid CBC (n=14) and > 48 hours of corticosteroid exposure in weeks -4 to -1 preceding diagnosis (n=31).

Figure S1.

A.

B.

Overall survival probability (y-axis), Years (x-axis)

Not Steroid Pretreated SR on AALL0331 ☎ ☏4980①
SR pts assigned to AALL0232 ☎ ☏45①

P=0.90