

Cytogenetic risk stratification to assess prognosis in adults with Philadelphia-negative acute lymphoblastic leukemia after allogeneic hematopoietic stem cell transplantation



Center for International Blood and Marrow Transplant Research (CIBMTR) registry



1731 patients with Philadelphia-negative acute lymphoblastic leukemia in complete remission



256 reporting centers in 38 countries



1099 (63.5%) with normal cytogenetics



632 (36.5%) with abnormal cytogenetics

- 5-year leukemia free survival 40%
- 5-year overall survival 42%

Multivariate analysis

Risk of relapse

• Monosomy 7	HR 2.11, 95% CI 1.04-4.27	$p=0.04$
• Complex karyotype	HR 1.69, 95% CI 1.06-2.69	$p=0.03$
• High hyperdiploidy	54% lower risk	
• del(7q), del(11q), t(8;14), t(11;19)	40% higher risk	

Treatment failure

• t(8;14)	HR 2.85, 95% CI 1.35-6.02	$p=0.006$
• del(7q)	HR 2.16, 95% CI 0.80-4.75	$p=0.06$
• Monosomy 7	HR 1.97, 95% CI 1.20-3.24	$p=0.007$
• del(17p)/i(17q)	HR 1.95, 95% CI 0.95-4.09	$p=0.1$
• High hyperdiploidy	HR 0.62, 95% CI 0.37-1.04	$p=0.07$
• Monosomal karyotype	HR 0.73, 95% CI 0.54-1.01	$p=0.05$

Monosomy 7, complex karyotype and t(8;14) pose significant risks and yield inferior outcome