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## Introduction

Refined disease risk index (DRI), based on disease type and disease status, divides large and heterogeneous cohort of patients with malignant disease undergoing allogeneic transplantation in 4 distinct subgroups with different outcomes. Unlike others available risk index, this tool includes also cytogenetics for acute leukemia (AL).

## Patients and Methods

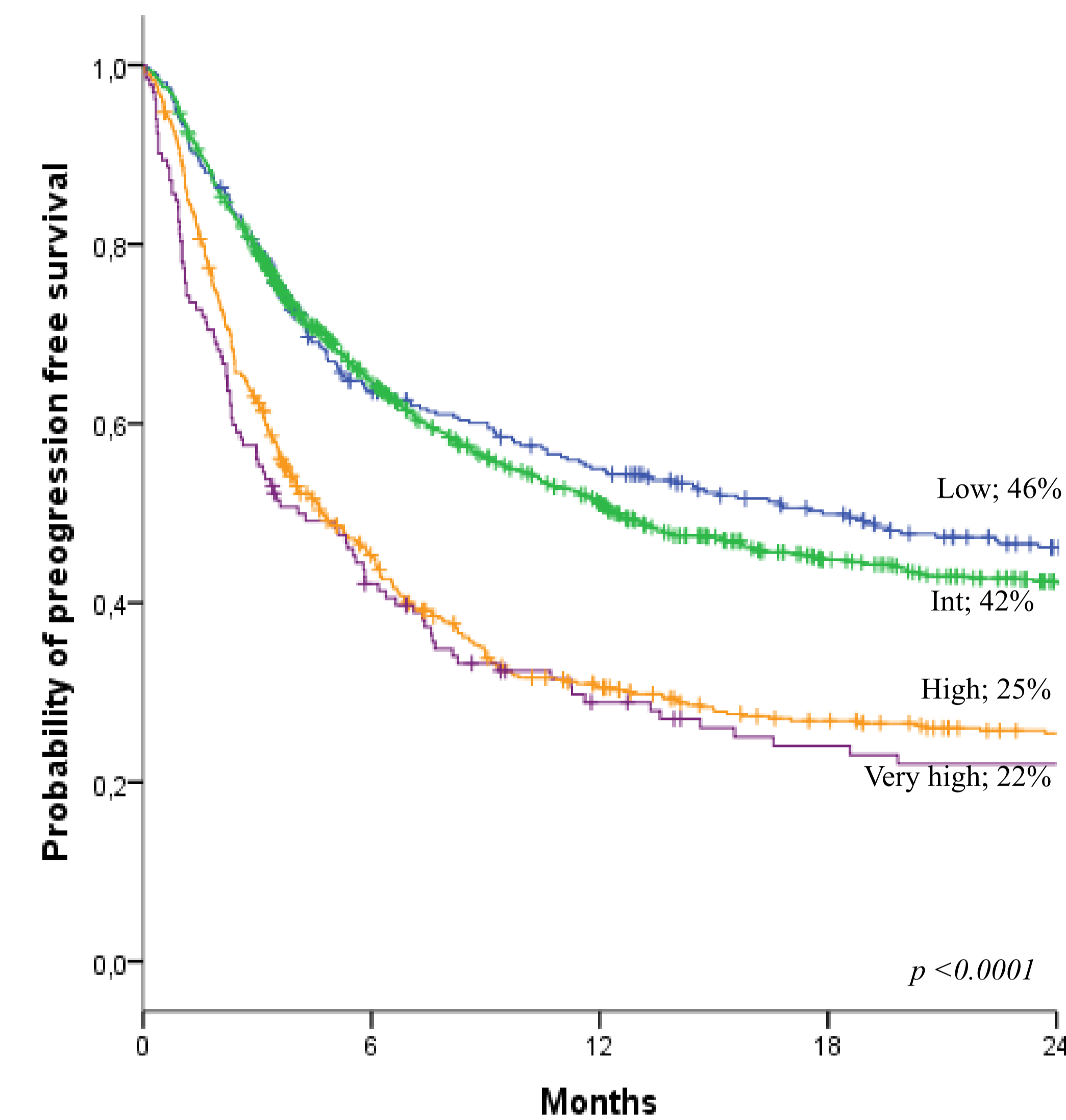
We retrospectively analyzed 2337 adults who underwent UCBT between 2004 and 2014 and had available data for DRI scoring.

Patients and Transplant Characteristics	n=2337 (range)
Diagnosis	
AL	1530
ALL	539
AML	991
favorable cytogenetics	88
intermediate cytogenetics	862
unfavorable cytogenetics	41
MDS	96
Intermediate cytogenetics	74
Adverse cytogenetics	22
MPD	156
LPD	467
MM	88
Median age at UCBT, yrs	42.6 (18-76) yrs
CMV	
positive	1438
negative	801
Median TNC at collection (x10 <sup>7</sup> /Kg)	4.2 (0.4-13)
Type of UCBT	
Single	1125
Double	1212
Conditioning regimen	
RIC	1206
Cy+Flu+TBI	852
Others	354
MAC	1130
Cy+Flu+TBI	250
Bu+Flu+TBI	359
Others	520
GVHD prophylaxis	
CsA+MMF	1419
Csa+Pred	369
Others	549

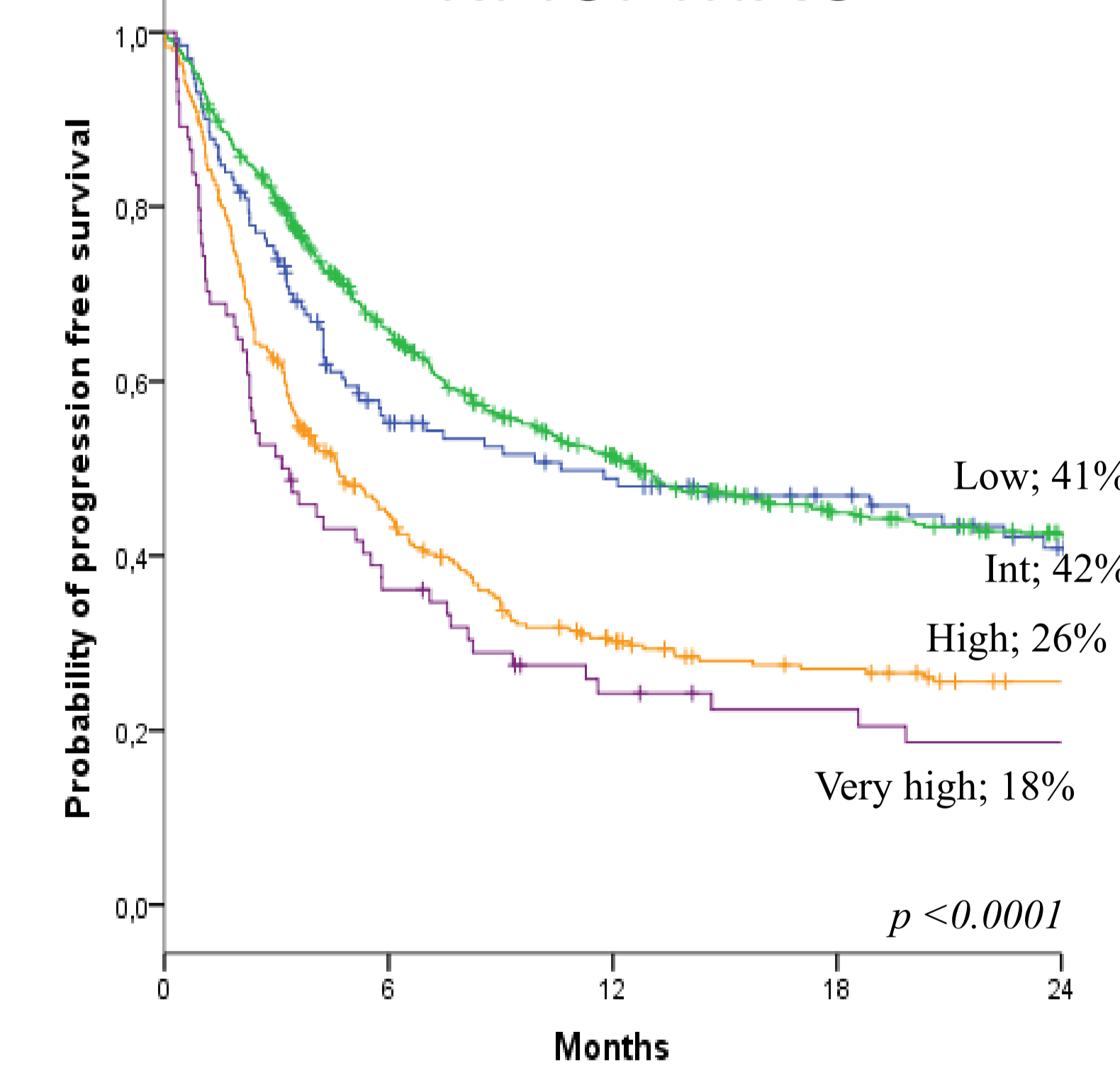
Disease/Stage	New DRI	2-y OS	2-y PFS
Hodgkin Lymphoma/CR	LOW	56±3%	46±3%
CLL/CR			
Mantle cell lymphoma/CR			
Indolent NHL/CR			
AML favorable cyto/CR			
CLL/PR			
Indolent NHL/PR	INT	48±2%	42±2%
CML/chronic phase			
CML/advanced phase			
Mantle cell lymphoma/PR			
MPD/Any stage			
AML intermediate cyto/CR			
ALL/CR1			
T-cell NHL/CR			
MM/CR-VGPR-PR			
Aggressive NHL/CR			
Low-risk MDS adverse cyto/Early			
T-cell NHL/PR			
Low-risk MDS intermediate cyto/Advanced	HIGH	31±2%	25±2%
Indolent NHL/Advanced			
CLL/Advanced			
High-risk MDS intermediate cyto/Advanced			
High-risk MDS adverse cyto/Early			
Aggressive NHL/PR			
T-cell NHL/Advanced			
AML favorable cyto/Advanced			
HL/Advanced			
High-risk MDS intermediate cyto/Advanced			
High-risk MDS adverse cyto/Advanced			
ALL/CR2			
AML adverse cyto/CR			
Mantle cell lymphoma/Advanced			
High-risk MDS adverse cyto/Advanced			
MM/Advanced			
ALL/CR3			
Low-risk MDS adverse cyto/Advanced			
AML intermediate cyto/Advanced			
CML/blast phase	VERY HIGH	26±4%	22±4%
ALL/Advanced			
Aggressive NHL/Advanced			
AML adverse cyto/Advanced			

## Results

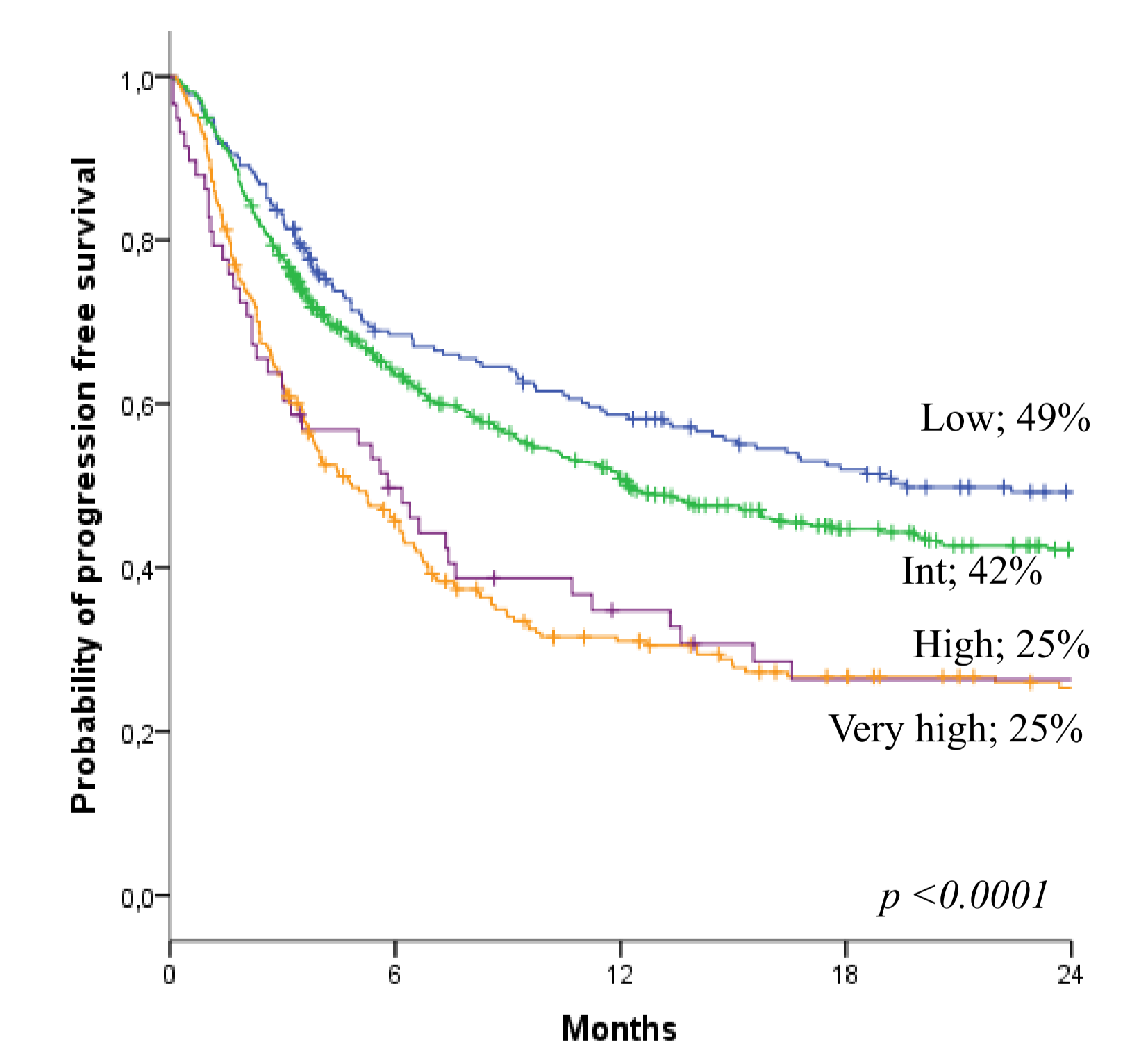
### 2-y PFS stratified according to refined DRI



### 2-y PFS according to refined DRI for MAC



### 2-y PFS according to refined DRI for RIC



Multivariate Analysis			
	HR	95% CI	P value
<b>PFS</b>			
ATG use	1.4	1.2-1.5	<0.0001
CMV serology (positive vs negative)	1.2	1-1.4	0.008
refined DRI (very high vs others)	2.2	1.6-3	<0.0001
Median age at UCBT	1.3	1.2-1.5	<0.0001
<b>OS</b>			
ATG use	1.5	1.3-1.7	<0.0001
CMV serology (positive vs negative)	1.2	1.1-1.4	0.03
refined DRI (very high vs others)	2.7	2-3.7	<0.001
Median age at UCBT	1.4	1.2-1.6	<0.001

## Conclusions

Refined DRI represents a valid instrument to stratify patients undergoing UCBT in retrospective large cohort studies, in addition to other existing pre-transplant index. Our results confirm the prognostic value of refined DRI and support the use of this simple tool for prospective trials in the future.