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POSTER ABSTRACTS

723.ALLOGENEIC TRANSPLANTATION: LONG-TERM FOLLOW-UP AND DISEASE RECURRENCE

IPSS-M Predicts Survival Outcomes Significantly Better Than IPSS-R in Patients Undergoing Allogeneic Hematopoietic Stem Cell Transplantation for Myelodysplastic Neoplasms

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Background
The newly published molecular International Prognostic Scoring System (IPSS-M) represents a powerful risk stratification tool for treatment decision-making in myelodysplastic neoplasms (MDS); however, its utility in the context of allogeneic hematopoietic stem cell transplantation (allo-HSCT) remains to be fully explored.

Methods
We retrospectively analyzed a large multicenter cohort of 347 MDS patients who underwent allo-HSCT between January 2017 and October 2022. The prediction accuracy of IPSS-M at diagnosis for 3-year survival outcomes was assessed and compared to that of the conventional revised International Prognostic Scoring System (IPSS-R).

Results
Among the 347 patients, median age at transplant was 48.3 years and 41.2% of patients were female. According to IPSS-M, patients were clustered as very low risk (1.2%), low risk (11.2%), moderately low risk (11.5%), moderately high risk (18.2%), high risk (33.4%), and very high risk (24.5%), resulting in a restratification of 49.3% of the entire cohort when compared with IPSS-R. Of these reclassified patients, 52.6% patients were upstaged and 47.4% were downstaged. Median follow-up time among the survivors was 28.6 (range, 4.7 to 76.6) months. With the IPSS-M model, overall survival (OS) and leukemia-free survival (LFS) discrimination was refined relative to the IPSS-R as evidenced by a 7.0 percentage- and 5.7 percentage-point increase in the concordance index (C-index), which was further supported by the lower Akaike Information Criterion and higher C-indexes in multivariate analyses. Among patients undergoing haploidentical HSCT, IPSS-M model also demonstrated significantly improved prognostic performance for LFS versus IPSS-R (C-index, 0.707 vs 0.604) which was validated by multivariate analyses. When restricting our analyses to younger patients (<49 years) and patients carrying detectable mutations, IPSS-M retained greater prognostic value with respect to OS and LFS; while it failed to stratify individual probability of OS and LFS in their counterparts.

Conclusions
IPSS-M was confirmed to increase prognostic discrimination at the individual level and is applicable to transplant-specific settings, which also had an advantage for subjects carrying mutations and younger patients.

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Disclosures No relevant conflicts of interest to declare.

Figure 1 Sankey diagram comparing IPSS-R and IPSS-M risk categories.

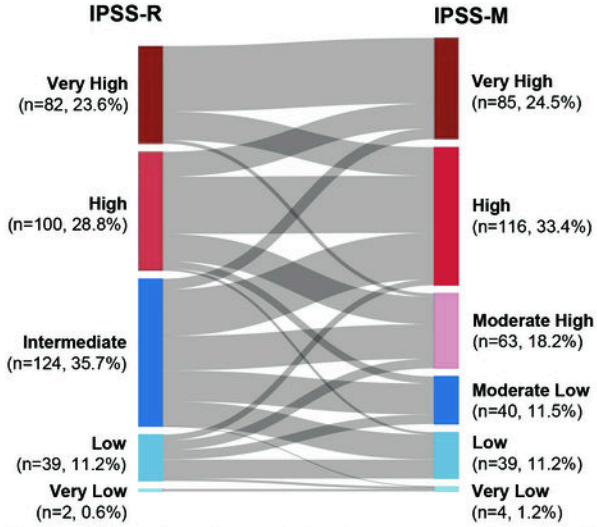

Table 1 Multivariable analyses for survival outcomes separately included IPSS-R and IPSS-M.

IPSS-R

Variable	HR (95% CI)	P
OS		
Recipient sex		
Female	1	
Male	1.57 (1.04 - 2.36)	0.030
Age at HSCT		
< 49	1	
> 49	1.59 (1.08 - 2.34)	0.018
IPSS-R		
Very low + low	1	
Intermediate	1.18 (0.59 - 2.39)	0.637
High	1.47 (0.70 - 3.06)	0.305
Very high	2.25 (1.08 - 4.67)	0.030
ABO match		
Match	1	
Mismatch	1.40 (0.96 - 2.06)	0.085
Interval from diagnosis to HSCT		
< 7.1	1	
> 7.1	1.68 (1.12 - 2.52)	0.012
Donor to recipient		
Female to male	1	
Others	1.11 (0.54 - 2.29)	0.776
Transfusion dependence		
No	1	
Yes	1.32 (0.89 - 1.95)	0.164
Concordance = 0.627 (se = 0.030); AIC=1188.02		
LFS		
Recipient sex		
Female	1	
Male	1.62 (1.10 - 2.38)	0.015
Age at HSCT		
< 49	1	
≥ 49	1.40 (0.98 - 2.01)	0.067
IPSS-R		
Very low + low	1	
Intermediate	1.19 (0.59 - 2.40)	0.632
High	1.76 (0.86 - 3.60)	0.124
Very high	2.95 (1.45 - 6.03)	0.003
ABO match		
Match	1	
Mismatch	1.37 (0.96 - 1.97)	0.087
Interval from diagnosis to HSCT		
< 7.1	1	
≥ 7.1	1.74 (1.18 - 2.55)	0.005
Donor to recipient sex		
Female to male	1	
Others	1.10 (0.56 - 2.16)	0.780
HSCT type		
MSD	1	
Haplo	1.24 (0.75 - 2.06)	0.395
MURD	0.79 (0.38 - 1.63)	0.522
Concordance = 0.633 (se = 0.027); AIC=1327.93		

IPSS-M

Variable	HR (95% CI)	P
OS		
Recipient sex		
Female	1	
Male	1.53 (1.02 - 2.29)	0.040
Age at HSCT		
< 49	1	
≥ 49	1.50 (1.02 - 2.20)	0.040
IPSS-M		
Very low + low	1	
Moderate low	1.17 (0.45 - 3.06)	0.751
Moderate high	1.25 (0.55 - 2.82)	0.599
High	2.03 (0.97 - 4.25)	0.061
Very high	2.82 (1.32 - 6.02)	0.007
ABO match		
Match	1	
Mismatch	1.35 (0.92 - 1.99)	0.126
Interval from diagnosis to HSCT		
< 7.1	1	
≥ 7.1	1.78 (1.19 - 2.65)	0.005
Donor to recipient		
Female to male	1	
Others	1.14 (0.55 - 2.37)	0.718
Transfusion dependence		
No	1	
Yes	1.13 (0.76 - 1.69)	0.549
Concordance = 0.648 (se = 0.028); AIC = 1184.81		
LFS		
Recipient sex		
Female	1	
Male	1.54 (1.05 - 2.25)	0.028
Age at HSCT		
< 49	1	
≥ 49	1.30 (0.91 - 1.87)	0.150
IPSS-M		
Very low + low	1	
Moderate low	1.26 (0.50 - 3.20)	0.623
Moderate high	1.37 (0.62 - 3.05)	0.435
High	2.15 (1.04 - 4.47)	0.040
Very high	3.41 (1.63 - 7.14)	0.001
ABO match		
Match	1	
Mismatch	1.33 (0.92 - 1.91)	0.124
Interval from diagnosis to HSCT		
< 7.1	1	
≥ 7.1	1.73 (1.19 - 2.53)	0.005
Donor to recipient sex		
Female to male	1	
Others	1.16 (0.59 - 2.28)	0.668
HSCT type		
MSD	1	
Haplo	1.22 (0.74 - 2.02)	0.435
MURD	0.76 (0.37 - 1.57)	0.458
Concordance = 0.646 (se = 0.027); AIC = 1328.16		

Figure 1

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