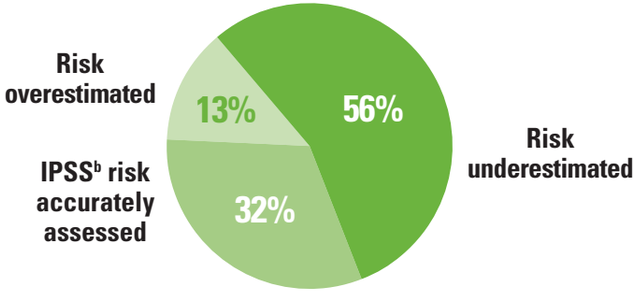
Guide to myelofibrosis risk prognosis

Incyte

Prognostic scoring systems are important tools for assessing patients' risk[1]

Approximately 80% of patients with myelofibrosis (MF) have intermediate or high-risk MF[2]

A Recent Retrospective Chart Review of 326 Patients With MF Found That the Prognoses for Nearly **6 of 10** Patients Were Underassessed[3a]



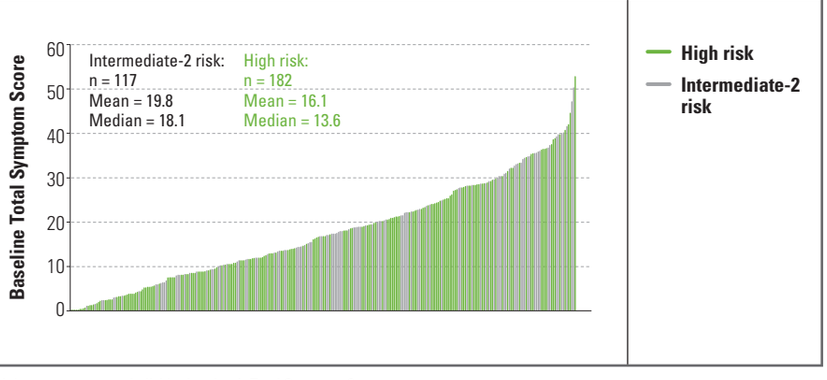
[a] **The Myelofibrosis Chart Audit Study was a market research study conducted in the first quarter of 2014. A total of 106 oncologists treating at least 3 patients with MF participated. Physicians were asked to categorize their patients' prognoses at the time of diagnosis. These prognoses were subsequently analyzed, leveraging the 5 IPSS criteria noted in the patient chart by the agency recruited to conduct this study on behalf of Incyte Corporation.[3]**

[b] International Prognostic Scoring System.

[c] Percentages total >100% due to rounding.

In a clinical trial, patient-reported symptom severity alone was not associated with prognostic risk assessment[3]*

Baseline Total Symptom Scores,[a] Range 0 to 52.7[3b]



Each bar represents an individual patient's Total Symptom Score.

[a] Symptoms were measured by the modified Myelofibrosis Symptom Assessment Form (MFSAF) v2.0 tool, a daily diary capturing the debilitating symptoms of myelofibrosis (abdominal discomfort, early satiety, pain under left ribs, pruritus, night sweats, and bone/muscle pain), using a scale of 0 to 10, where 0 is absent and 10 is the worst imaginable.[3]

[b] Possible range, 0 to 60.[3]

- In a large, randomized clinical trial, patients with intermediate-2 MF had a higher mean/median baseline Total Symptom Score than patients with high-risk MF. Accordingly, symptom severity independently did not determine prognostic risk[3]

* As determined by IPSS.[2]

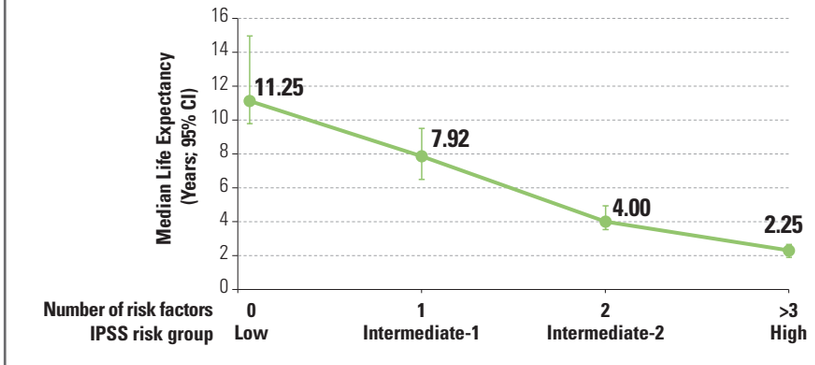
The International Working Group for Myelofibrosis Research and Treatment (IWG-MRT) has developed 2 scoring systems to help estimate patient prognosis[2,4]

- **International Prognostic Scoring System (IPSS)** is used to assess prognosis at the time of diagnosis[2]
- **Dynamic International Prognostic Scoring System (DIPSS)** is used to assess prognosis any time after diagnosis[4]
- IPSS and DIPSS use the same risk factors but differ in how those factors are weighted[2,4]
  - Each risk factor counts as 1 point; however, in DIPSS, anemia counts as 2 points

IPSS and DIPSS Risk Assessment Models for MF[2,4]

Risk Factors	Risk Group	Total Number of Points	
		IPSS	DIPSS
1. Circulating blast cells ≥1% 2. Hemoglobin (Hb) level <10 g/dL 3. Leukocyte count >25 × 10^9/L 4. Age >65 years 5. Constitutional symptoms	Low	0	0
	Intermediate-1	1	1 or 2
	Intermediate-2	2	3 or 4
	High	3 or more	5 or 6

MF: Effects of Risk Factors on Survival[2]



Adapted with permission from The American Society of Hematology.

CI, confidence interval.

Prognostic risk is important to consider along with clinical evaluation

Prognosis for some patients with intermediate or high-risk MF may be underassessed by spleen size and symptom burden alone[3]

- As shown by the following profiles from a large clinical trial, using tools such as IPSS and DIPSS along with clinical evaluation can result in a more accurate prognostic evaluation for your patients
- In a large clinical trial, median palpable spleen length was 16 cm, and 81% of patients had spleen length ≥10 cm. Mean Total Symptom Score at baseline was 18 for active treatment and 16.5 for placebo. For 5 patients, Total Symptom Score was 0 at baseline[3]

Intermediate-2–risk patient with post–polycythemia vera (PV) MF[3]

66-year-old female
diagnosed with post-PV MF 2.5 years prior

Clinical presentation:

- Hb level 11.1 g/dL
- White blood cell (WBC) count 7.3 × 10^9/L
- Neutrophil count 6.09 × 10^9/L
- Platelet count 231 × 10^9/L
- Fibrosis grade 3 (of possible 6)
- Circulating blasts ≥1%
- Palpable spleen length 15 cm below the costal margin
- Total Symptom Score[a] 0.85
  - Night sweats 0
  - Itchiness 0
  - Abdominal discomfort 0.57
  - Pain under left ribs 0.14
  - Feeling of fullness (early satiety) 0.14
  - Bone or muscle pain 0
- Other symptoms
  - No fever
  - No weight loss
- Risk group at screening: Intermediate-2 (2 factors)[b]
  - Risk factor 1: Age >65 years
  - Risk factor 2: Circulating blasts ≥1%

High-risk patient with post–essential thrombocythemia (ET) MF[3]

66-year-old male
diagnosed with post-ET MF 0.2 years prior

Clinical presentation:

- Hb level 14.1 g/dL
- WBC count 28.4 × 10^9/L
- Neutrophil count 19.87 × 10^9/L
- Platelet count 381 × 10^9/L
- Fibrosis grade 2 (of possible 6)
- Circulating blasts ≥1%
- Palpable spleen length 8 cm below the costal margin
- Total Symptom Score[a] 0
  - Night sweats 0
  - Itchiness 0
  - Abdominal discomfort 0
  - Pain under left ribs 0
  - Feeling of fullness (early satiety) 0
  - Bone or muscle pain 0
- Other symptoms
  - No fever
  - No weight loss
- Risk group at screening: High (≥3 factors)[b]
  - Risk factor 1: Age >65 years
  - Risk factor 2: Circulating blasts ≥1%
  - Risk factor 3: WBC count 25 × 10^9/L

[a] Baseline Total Symptom Score was calculated as the average of all scores from days 1-7.[3]
[b] Per IPSS, the prognostic tool used in this trial.[2]

Assess patients' risk for progression to myelofibrosis

Incidence of progression to MF from PV or ET[5]

- PV and ET have a variable risk for transformation to secondary MF (post-PV MF and post-ET MF)
- Evolution to post-PV MF and post-ET MF occurs at a rate of 10% to 20% after 15 to 20 years of follow-up

Signs of possible progression to MF in patients with PV or ET	
Clinical assessment[6,7] • Anemia • Lactate dehydrogenase (LDH) • Reduced need for phlebotomy • Reduced dose of cytotoxic therapy • Leukoerythroblastosis • Increasing splenomegaly	**Constitutional symptoms[7]** • Prolonged fever • Weight loss • Night sweats

Consider bone marrow biopsy in patients with PV or ET in whom progression is suspected.

Diagnostic and prognostic resources

Please visit MyelofibrosisRisk.com to access tools to help you:

- Accurately diagnose primary MF, post-PV MF, and post-ET MF
- Assess patient prognosis consistent with validated tools

Tap your smartphone's share or menu icon to add MyelofibrosisRisk.com to your phone's home screen for quick and easy access.

References: 1. Gangat N et al. *J Clin Oncol.* 2011;29(4):392-397. **2.** Cervantes F et al. *Blood.* 2009;113(13):2895-2901. **3.** Data on file. Incyte Corporation. Wilmington, DE. **4.** Passamonti F et al. *Blood.* 2010;115(9):1703-1708. **5.** Passamonti F et al. *Oncotarget.* 2011;2(6):485-490. **6.** Passamonti F et al. *Haematologica.* 2008;93(11):1645-1651. **7.** Passamonti F. *Blood.* 2012;120(2):275-284.