# CLINICAL PROFILE, MOLECULAR LANDSCAPE, AND OUTCOMES OF MYELOFIBROSIS IN LEBANON: REAL-WORLD DATA

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## INTRODUCTION

- Myelofibrosis (MF) is a rare chronic myeloproliferative neoplasm with variable clinical presentation, heterogeneous molecular profiles and a substantial symptom burden.
- Most existing knowledge derives from North American and European cohorts, with limited data from the Middle East.
- To address this gap and the growing need for specialised care, a dedicated MPN clinic was established at our center, prompting evaluation of patient profiles and outcomes.

## AIM

- To describe the clinical, molecular and treatment characteristics of MF patients managed through a dedicated MPN clinic in Lebanon.
- To evaluate treatment patterns, patient-reported experiences and clinical outcomes in a real-world setting.
- To assess the impact of the economic crisis on treatment availability, adherence and continuity.

## METHODS

- **Design:** retrospective electronic medical record analysis combined with a survey-based sub-study.
- **Patients:** adults diagnosed with primary or secondary MF between December 2018 and December 2025.
- **Data:** clinical, molecular, laboratory, treatment and outcome variables; risk stratified by IPSS. Analysed in SPSS v26.
- **Sub-study:** a subset completed a validated questionnaire on quality of life, treatment adherence and availability, and the impact of the economic crisis.
- **Analysis:** Kaplan–Meier method for survival.

## CONCLUSIONS

- Clinical and molecular features of MF in this cohort were broadly consistent with published data.
- Real-world differences in treatment delivery and continuity were evident, driven largely by financial and access-related barriers.
- These findings highlight the value of dedicated MPN programmes and the importance of regional data to understand the biological and healthcare-system factors influencing MF outcomes.

## RESULTS

### Cohort and disease

- 117 patients; median age 58 years (range 18–88)
- Primary MF 79.5%; secondary MF 20.5%
- IPSS high risk 51.8% (n = 114)

### Molecular landscape

- JAK2 V617F 50.4%; CALR 10.3%
- TET2 15.4%; ASXL1 7.7%
- High molecular risk mutation in 14.5%

### Treatment

- Ruxolitinib 57.8% any line, 45.1% first line
- Hydroxyurea 26.7%; allogeneic SCT 6.8%
- Transplant rate similar by risk group (p = .463)

### Outcomes

- Median follow-up 47.9 months
- 5-year overall survival 89.7%
- Death 21.1% vs 1.8% and AML 17.5% vs 5.3% in high vs low risk (p = .001, p = .039)

**Table 1.** *Clinical, molecular, treatment and outcome characteristics.*

| Characteristic | Value | Characteristic | Value |
|---|---|---|---|
| **Patients, n** | **117** | **NGS performed:** | **56 (47.9%)** |
| Age at diagnosis, median (range) | **58 (18–88)** | JAK2 V617F | **59 (50.4%)** |
| Male | **71 (60.7%)** | CALR exon 9 | **12 (10.3%)** |
| Lebanese | **98 (83.8%)** | TET2 | **18 (15.4%)** |
| Primary MF | **93 (79.5%)** | ASXL1 | **9 (7.7%)** |
| Secondary MF (post-PV / post-ET) | **24 (20.5%)** | High molecular risk ‡ | **17 (14.5%)** |
| **IPSS/DIPSS score:** | | **Treatment:** | |
| IPSS high risk † | **59 (51.8%)** | Ruxolitinib (any line) | **67 (57.8%)** |
| IPSS intermediate † | **43 (37.7%)** | Hydroxyurea (any line) | **31 (26.7%)** |
| Hemoglobin < 10 g/dL | **57 (48.7%)** | Allogeneic SCT | **8 (6.8%)** |
| Platelets < 50 × $10^9$/L | **37 (31.6%)** | Splenomegaly | **70 (59.8%)** |
| Normal karyotype | **56 (47.9%)** | Thrombosis | **22 (18.8%)** |
| Complex karyotype | **4 (3.4%)** | AML transformation | **13 (11.1%)** |
| Charlson index, severe risk | **22 (18.8%)** | Death | **13 (11.1%)** |

*n (% of N = 117). † Of the 114 patients with an evaluable IPSS score. ‡ ASXL1, EZH2, IDH1/IDH2, TP53, SRSF2 or U2AF1. Driver mutations were assessed across the cohort by targeted testing; the extended NGS panel was performed in 56 (47.9%), and non-driver mutations were detected only within that subgroup.*

### Patient-reported experience:
*Survey sub-study*

**100%**
had a total symptom score in the severe range

**57.14%**
reported treatment interruptions or medication rationing

*Financial and access-related obstacles were frequently reported.*

**Most common symptoms at diagnosis (N = 117)**
Fatigue 23.1%, incidental laboratory finding 23.1%, abdominal discomfort 17.9%, weight loss 12.0%, night sweats 8.5%

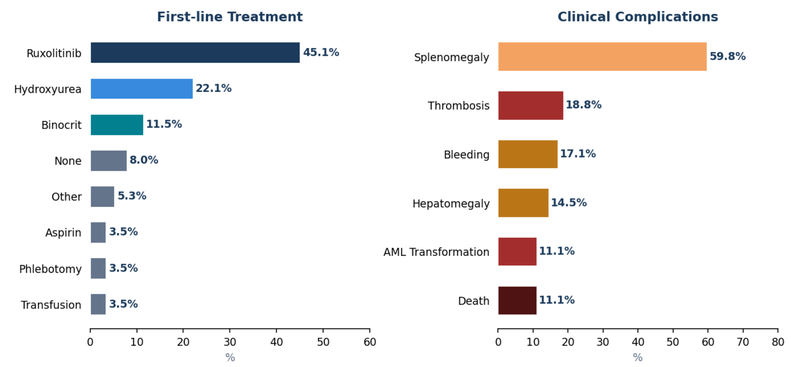


**Figure 1.** *First-line treatment and clinical complications (N = 117).*

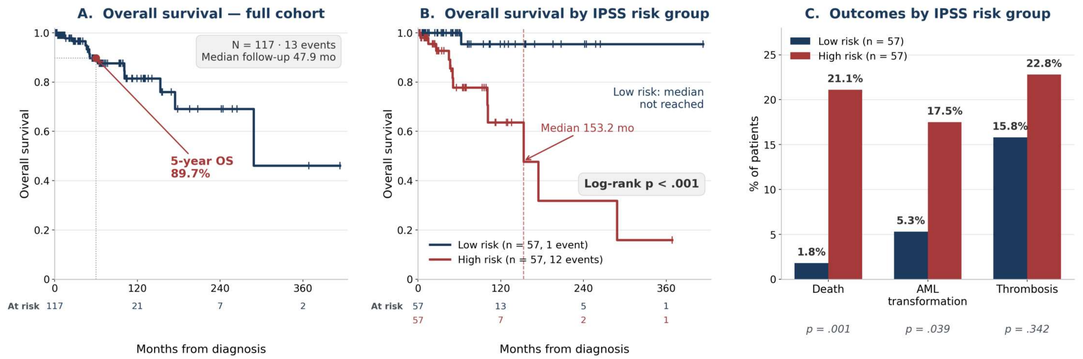


**Figure 2.** *Overall survival for the full cohort (A), by IPSS risk group (B), and outcomes by IPSS risk group (C). Median follow-up 47.9 months by reverse Kaplan–Meier.*

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