MPN-109

Treatment Patterns and Blood Count Control in 10,112 Patients With Polycythemia Vera Managed at Community Practices in the United States

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Introduction

- Polycythemia vera (PV) is a myeloproliferative neoplasm that is characterized by increased production of red blood cells. Increases in white blood cells (WBC) and platelets are also frequently observed[1]
- Elevated hematocrit (HCT) and WBC counts are associated with increased risk of thrombosis and mortality in patients with PV[2,3]
- Current National Comprehensive Cancer Network (NCCN) guidelines recommend phlebotomy to maintain HCT<45% in all patients and cytoreductive treatment for patients at high thrombotic risk[4]

Objective

- To describe treatment patterns and blood count control in patients with PV in large networks of US community oncology practices

Methods

Study Design and Patients

- This was a retrospective study of adult patients with an initial PV diagnosis and ≥2 postdiagnosis visits during the study period (January 2014 through May 2023) in the de-identified Integra Precision Q electronic health record database
- Uncontrolled blood counts were defined as HCT ≥45%, WBC count ≥11×10^9/L, or platelet (PLT) count >400×10^9/L

Statistical Analyses

- Data were summarized using descriptive statistics

Results

Patient Characteristics

- Of 18,799 patients diagnosed with PV during the study period, 10,112 met inclusion criteria for this analysis (**Table 1**)

Table 1. Patient Demographics and Characteristics at Diagnosis

	N=10,112
Age at PV diagnosis, mean (SD), y	65.1 (13.3)
≥60 y, n (%)	7014 (69.4)
Male, n (%)	6306 (62.4)
Race, n (%)	
White	6026 (59.6)
Black or African American	354 (3.5)
Asian	117 (1.2)
Other*	3615 (35.7)
Ethnicity, n (%)	
Hispanic	404 (4.0)
Not Hispanic	7404 (73.2)
Not documented/unknown/other	2304 (22.8)
Elevated HCT (≥45%), n/N† (%)	6092/7063 (86.3)
Elevated WBC count (≥11×10^9/L), n/N† (%)	2301/8051 (28.6)
Elevated PLT count (>400×10^9/L), n/N† (%)	2348/8017 (29.3)

HCT, hematocrit; PLT, platelet; PV, polycythemia vera; WBC, white blood cell.
* Reported as "other" in structured data of the electronic health record without further details. † Including patients with available blood count data.

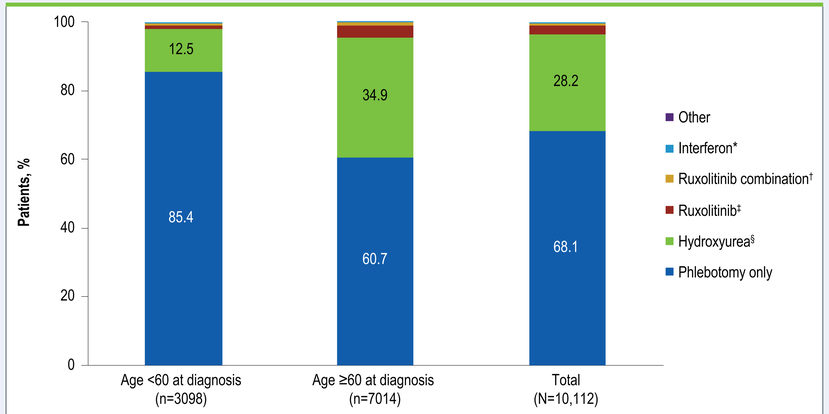
Treatment Patterns

- Most patients received phlebotomy (68.1%) or hydroxyurea (28.2%) as initial treatment (**Figure 1**)
- 82% of patients who received phlebotomy alone as initial treatment did not receive cytoreductive treatment as subsequent therapy (**Figure 2**)
- Among patients who received hydroxyurea as initial treatment, 334 (11.7%) also received phlebotomy while on hydroxyurea (**Table 2**), and most (87%) did not change treatment during the study period (**Figure 2**)

Blood Count Control

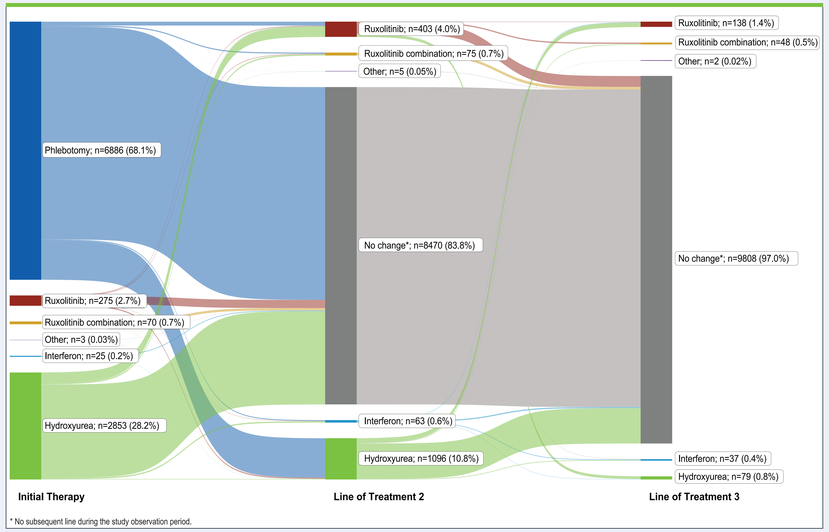
- 21.3% of patients receiving phlebotomy alone as initial treatment and 46.1% receiving hydroxyurea as initial treatment had HCT, WBC, and PLT controlled at 12 months
- After 1 year of treatment, HCT was elevated in 30% of patients who received hydroxyurea as initial treatment (**Figure 3**)

Figure 1. Initial Treatment for PV



Data labels are shown for treatments >5%.
* Interferon alfa-2b, peginterferon alfa-2a, and/or ropeginterferon alfa-2b. † Ruxolitinib plus hydroxyurea or ropeginterferon alfa-2b. ‡ Ruxolitinib monotherapy ± phlebotomy. § Hydroxyurea ± phlebotomy.

Figure 2. Treatment Transitions



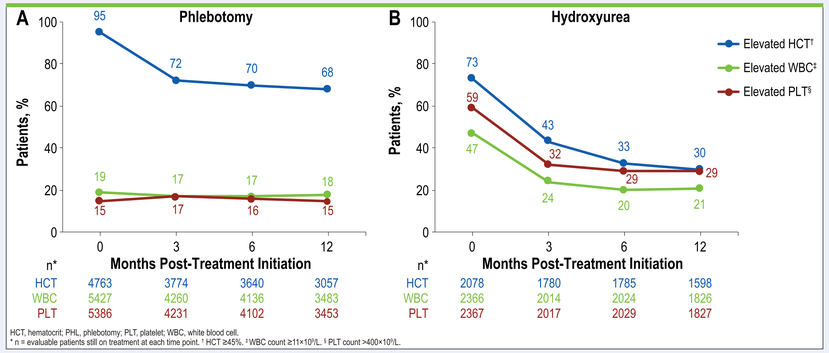
* No subsequent line during the study observation period.

Table 2. Treatment Patterns in Patients Receiving Phlebotomy Alone or Hydroxyurea as Initial Treatment

	Phlebotomy Alone (n=6886)	Hydroxyurea (n=2853)
Time from diagnosis to initial treatment start, median (IQR), d	7 (1–63)	10 (1–70)
Length of follow-up from initial treatment start, median (IQR), mo	32.1 (13.5–58.5)	31.5 (16.8–54.9)
Absolute duration of initial HU, median (IQR), mo	N/A	25.7 (11.0–48.0)
Time to last recorded PHL, median (IQR), mo	12.6 (1.6–34.8)	N/A
HCT ≥45% prior to initial treatment initiation, n (%)*	4504/4763 (94.6)	1516/2078 (73.0)
Addition of PHL to initial treatment†	N/A	334 (11.7)
Number of PHL procedures following initiation of HU as initial treatment, median (IQR)		
Post 4 wk	N/A	1 (0–2)
Post 3 mo	N/A	2 (1–3)
Post 6 mo	N/A	2 (1–4)
Post 12 mo	N/A	3 (2–5)

HCT, hematocrit; HU, hydroxyurea; IQR, interquartile range; N/A, not applicable; PHL, phlebotomy.
* Of patients with available HCT details. † PHL use was documented in a structured database.

Figure 3. Blood Counts Over Time During Initial Treatment With (A) Phlebotomy Alone or (B) Hydroxyurea



n*				
HCT	4763	3774	3640	3057
WBC	5427	4260	4136	3483
PLT	5386	4231	4102	3453

n*				
HCT	2078	1780	1785	1598
WBC	2366	2014	2024	1826
PLT	2367	2017	2029	1827

HCT, hematocrit; PHL, phlebotomy; PLT, platelet; WBC, white blood cell.
* n = evaluable patients still on treatment at each time point. † HCT ≥45%. ‡ WBC count ≥11×10^9/L. § PLT count >400×10^9/L.

Conclusions

- **Most patients with PV received phlebotomy monotherapy as initial treatment, with nearly 70% having uncontrolled HCT (≥45%) after 1 year of treatment**
- **30% of patients who received hydroxyurea as initial treatment had elevated HCT after 1 year of treatment**
- **Most patients remained on phlebotomy or hydroxyurea despite uncontrolled blood counts**
- **Alternative treatments should be considered for patients not meeting treatment goals**

Disclosures

JY and EB are employees and shareholders of Incyte Corporation. AV and HK are employees of Integra Connect Precision Q and paid consultants of Incyte.

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References

1. Spivak JL. *N Engl J Med*. 2017;376(22):2168-2181. **2.** Marchioli R, et al. *N Engl J Med*. 2013;368(1):22-33. **3.** Gerds AT, et al. *Blood*. 2023:doi: 10.1182/blood.2023020232. **4.** National Comprehensive Cancer Network. NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) for Myeloproliferative Neoplasms, version 1. 2024. All rights reserved. © National Comprehensive Cancer Network, Inc. Available at: https://www.nccn.org/guidelines/guidelines-detail?category=1&id=1477. Accessed February 1, 2024.

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