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Retrospective Evaluation of BCR::ABL1-Negative Myeloproliferative Neoplasms (MPNs) Treated with Pegylated Interferon Alfa-2A at a Single Center

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INTRODUCTION

Classical *BCR::ABL1* negative myeloproliferative neoplasms (MPNs) include polycythemia vera (PV), primary myelofibrosis (PMF), and essential thrombocythemia (ET). These neoplasms originated from clonal hematopoietic stem cells and share distinct pathological and molecular similarities. The primary goals of MPN treatment are to avoid vascular complications and prevent leukemic transformation. Several therapeutic alternatives, including low-dose ASA, Hydroxyurea, anagrelide, and ruxolitinib, are available according to the risk classification of the patient and the disorder. Interferon-alfa (IFN-α) have begun using in MPN patients many years ago. However, historically, INF-alpha therapy has gained interest in special populations such as young patients or pregnant women

AIM

Data on the usage of peg-IFN-α2a in MPN especially in developing or low-middle income countries are scarce. Therefore, we aimed to evaluate the outcomes of MPN patients treated with PEG-IFN-α-2a at a single center in a developing country.

METHOD

Thirteen patients diagnosed with *BCR::ABL1*-negative MPNs between March 2022 and 2023 were included in the analysis. All patients were treated with peg-IFN-α2a, starting at a weekly dose of 135 mcg. The therapeutic responses were determined based on the ELN/IWG-MRT criteria for essential thrombocythemia (ET), polycythemia vera (PV), and myelofibrosis (MF). Dose modifications were made according to response or toxicities.

RESULTS

Among the patients, six were female and seven were male, with a median age of 56 (range: 21-70). Nine patients had ET, two had PV, and two had MF. Most ET and PV patients showed normalization of blood counts and symptom improvement, resulting in a partial response. In MF patients, one had a partial response, and one was unresponsive. Side effects included muscle pain, back pain, and rash, requiring dose modifications in five patients

Patient	Gender	Age	Mutation	Allele Burden (%)	Duration of peg-inf-alfa-2 (months)
1	Male	46	CALR type-1		6
2	Female	59	JAK2	18	6
3	Female	21	Triple Negative		7
4	Male	70	CALR type-1		7
5	Male	56	JAK2	76	7
6	Female	69	JAK2	34	4
7	Male	52	JAK2	61	6
8	Female	27	JAK2	12	10
9	Male	63	JAK2	48	6
10	Female	37	JAK2	12	6
11	Male	44	JAK2	5	5
12	Female	60	Triple Negative		4
13	Male	60	JAK2	13	4

Patient	MPN Diagnose Year	Prior Treatment	Dosing Interval	Dose Increase	Side Effects
1	2019	Aspirin			Myalgia
2	2021	HU			Back pain
3	2022		135 mcg 2 weekly		
4	2022			180 mcg	
5	2022			180 mcg	
6	2022				
7	2022				Myalgia
8	2022				Rash
9	2021	Aspirin	135 mcg 2 weekly		
10	2022		135 mcg 2 weekly		
11	2022				
12	2022				
13	2022				

CONCLUSIONS

Despite the challenges associated with administration and side effects, our limited data from a single center in a developing country suggest that peg-IFN-α2a remains a viable treatment option for *BCR::ABL1*-negative MPN patients. Further studies with longer follow-up periods and larger patient cohorts are needed to confirm the efficacy and safety of peg-IFN-α2a in this population.

REFERENCES

1. How J, Hobbs G. Use of Interferon Alfa in the Treatment of Myeloproliferative Neoplasms: Perspectives and Review of the Literature. Cancers (Basel). 2020;12(7).
2. How J, Hobbs G. Interferons as the First Choice of Cytoreduction in Essential Thrombocythemia and Polycythemia Vera. J Natl Compr Canc Netw. 2022;20(9):1063-8.
3. Yoon SY, Won JH. The clinical role of interferon-alpha in Philadelphia-negative myeloproliferative neoplasms. Blood Res. 2021;56(S1):S44-S50.

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