

Introduction

- Approximately 5-20% of patients with myeloproliferative neoplasms (MPNs) will progress to acute myeloid leukemia
- At this point, they are deemed to have blast-phase MPN (MPN-BP)
- The prognosis of MPN-BP is dismal, with chemotherapy providing little benefit
- Low-intensity therapy such as hypomethylating agents are preferred; however, prognosis remains poor
- Allogeneic stem cell transplant (AHCT) is still the only potential for long term survival

Methods

- Single-institution, retrospective analysis of 70 MPN-BP treated at Moffitt Cancer Center between 2001 and 2020
- Patients stratified by initial treatment for MPN-BP:
 - Best supportive care (BSC)
 - HMA (Hypomethylating agent-based)
 - Intensive Chemotherapy (IC)
- Median overall survival (mOS) was measured from diagnosis of MPN-BP to date of death or censored at time of last follow-up.
- All statistical analyses were performed using SPSS software and Graphpad

Results

Figure 1. Initial treatment approach for MPN-BP

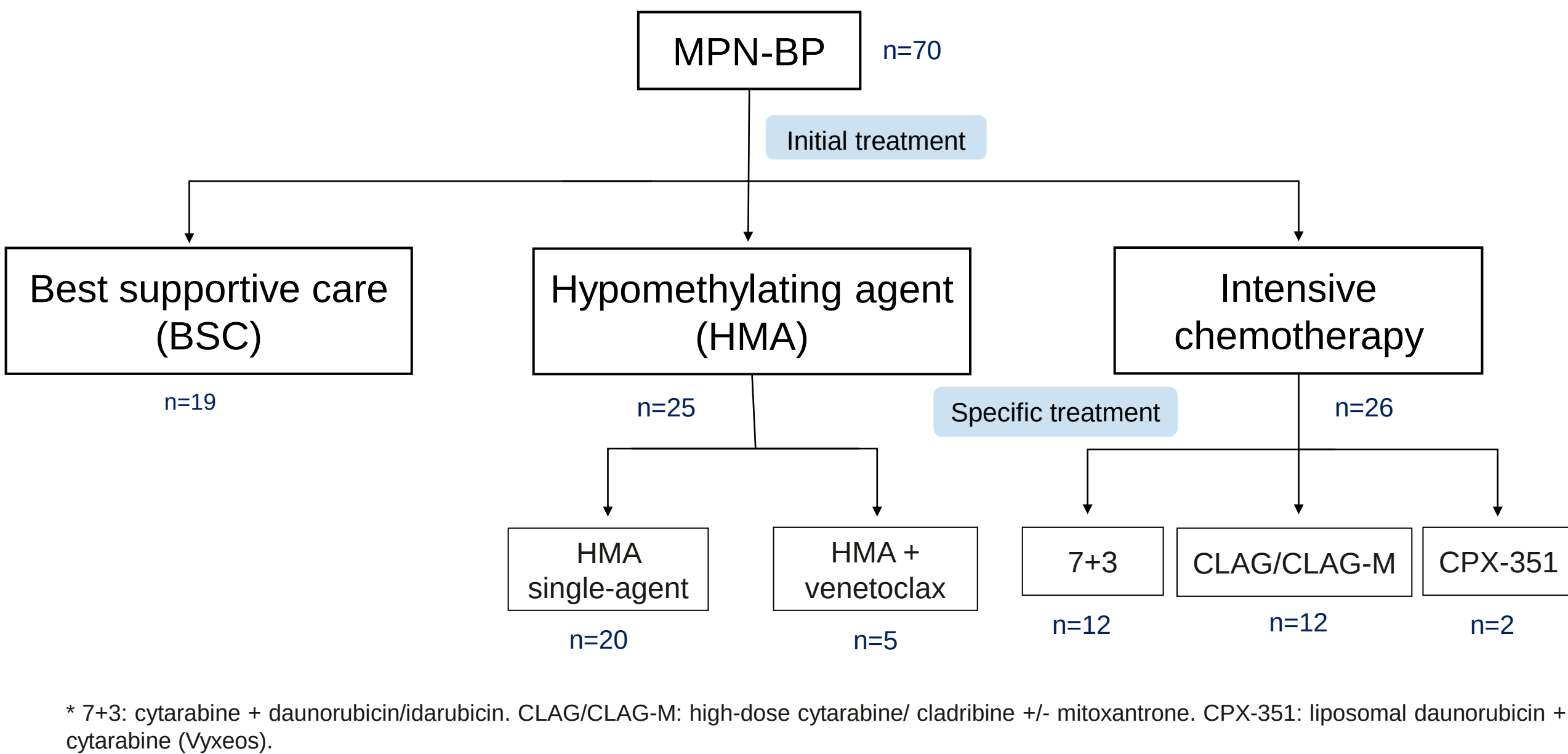
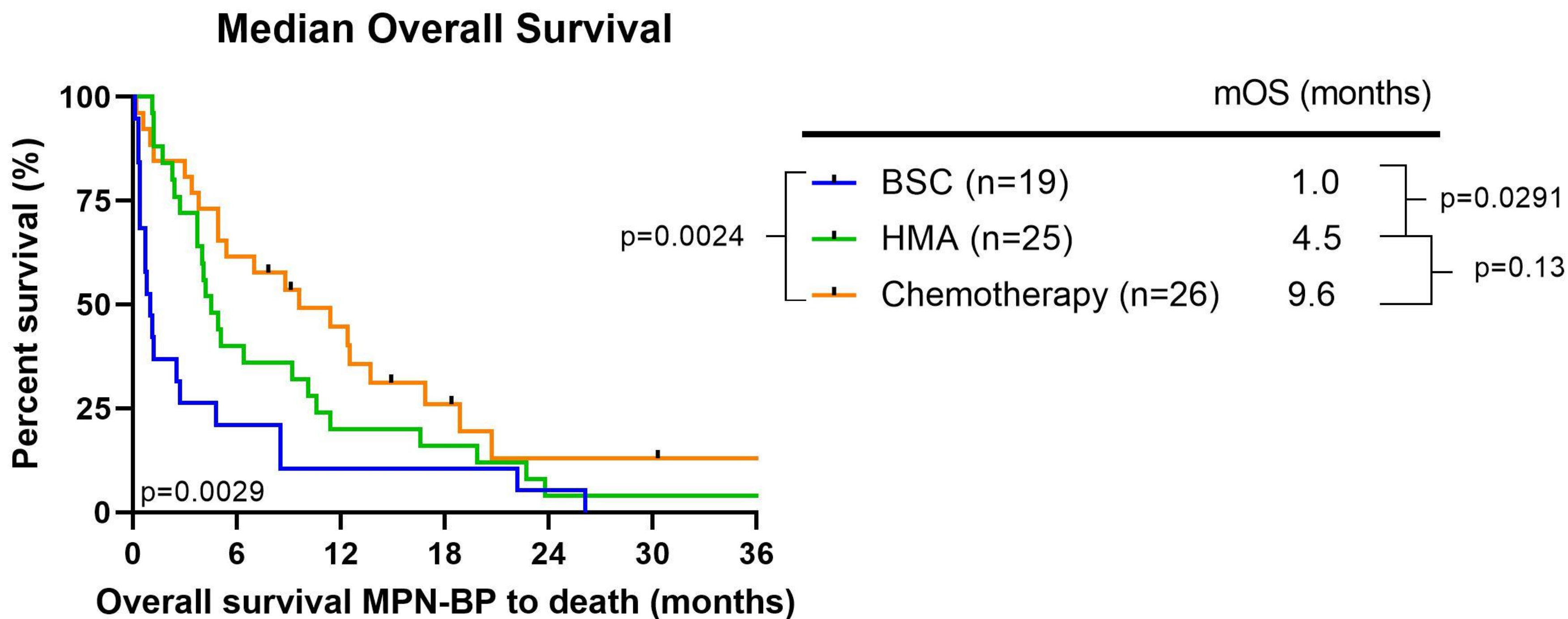


Table 1. Baseline clinical characteristics

Variable	Initial Treatment			p value
	BSC (n=19)	HMA (n=25)	Chemotherapy (n=26)	
Age at Diagnosis (years), median	69.8	65.7	61.8	0.035
Age at AML (years), median	72.9	69.0	63.9	0.014
Female Gender, n (%)	9 (47%)	12 (48%)	9 (35%)	0.574
Time MF to AML (months), median	29.4	20.3	22.7	0.999
ECOG Performance status 0-1, n (%)	8 (50%)	11 (46%)	16 (70%)	0.238
Number of comorbid conditions, mean	1.5	1.8	1.7	0.814
AHSCT n(%)	1 (5%)	1 (4%)	12 (46%)	<0.001

*BSC: best supportive care. HMA: hypomethylating agent. AML: acute myeloid leukemia. MF: myelofibrosis. ECOG: Eastern Cooperative Oncology Group performance status score. AHSCT: allogeneic hematopoietic stem cell transplant.

Graph 1. Survival based on initial treatment option



Patients who received initial treatment with intensive chemotherapy were younger at diagnosis of MPN-BP and more likely to proceed to AHSCT

Independent of age, patients receiving therapy (either HMA or intensive chemotherapy) had superior OS compared to those receiving BSC (p = 0.017)

There were no significant differences in driver mutations or in high molecular risk mutations between the 3 treatment groups

Discussion

- In MPN-BP, the receipt of AHCT primarily influenced survival
- Patients receiving active treatment had better outcomes to those that received supportive care alone
- Intensive chemotherapy may be a reasonable approach in younger patients as it can provide a bridge to AHCT
- This study confirms the dismal prognosis associated with MPN-BP and reinforces the need for novel therapies for this group of patients

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References

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