Myeloproliferative Neoplasms (MPN) Drug Information Sheet

Please note: For the most current information, consult the package insert for approved indications and safe usage.

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MPN Type **MF**	**Indications** **Constitutional symptoms, splenomegaly**		
Agent/Class Ruxolitinib/ JAK Inhibitor[1]	**Patient Characteristics** Debilitating constitutional symptoms or significant splenomegaly; independent of JAK2 mutational status	**Starting Dose** Maximum dose: 25 mg po BID Start at 20 mg BID for a platelet count >200K/microL; Start at 15 mg BID for a platelet count between 100K and 200K/microL; Start at 5 mg BID for a platelet count between 50K and <100K/microL; Start at 10 mg BID for a platelet count ≥100K/microL and renal impairment, hepatic impairment, or with strong CYP3A4 inhibitors	**Cautions/Monitoring** Anemia and thrombocytopenia
MPN Type **MF**	**Indications** **Anemia, splenomegaly**		
Agent/Class Lenalidomide (Revlimid) with or without corticosteroid/ Immunomodulatory agent[2]	**Patient Characteristics** del(5q) and symptomatic	**Starting Dose** 5 mg/day if pretherapy platelet count is <100K/microL, otherwise 10 mg/day continuously	**Cautions/Monitoring** Myelosuppression and thrombosis, avoid in women of childbearing age; avoid in patients with neuropathy
MPN Type **MF**	**Indications** **Anemia**		
Agent/Class Thalidomide with or without corticosteroid/ Immunomodulatory agent[3]	**Patient Characteristics** Not a good candidate for ESA therapy or inadequate response to ESA	**Starting Dose** 50 mg orally daily, slow titration every 2 weeks with corticosteroid	**Cautions/Monitoring** Avoid in women of childbearing age; avoid in paitents with neuropathy
Agent/Class Darbepoetin alfa/ Erythropoiesis-stimulating agents (ESA)[4]	**Patient Characteristics** No splenomegaly, serum erythropoietin level of <125 U/L, and transfusion independent	**Starting Dose** 150 to 300 mcg SQ weekly	**Cautions/Monitoring** H/H; avoid in patients with uncontrolled hypertension or recent MI
Agent/Class Epoiten alpha/ Erythropoiesis-stimulating agents (ESA)[5]	**Patient Characteristics** Void of splenomegaly, serum erythropoietin level of <125 U/L, and transfusion independent	**Starting Dose** 10,000 units SQ 3 times weekly	**Cautions/Monitoring** H/H; avoid in patients with uncontrolled hypertension or recent MI
Agent/Class Fluoxymesterone/ Androgen[6]	**Patient Characteristics** Not a good candidate for ESA therapy or inadequate response to ESA	**Starting Dose** 10 mg orally 2 to 3 times/day	**Cautions/Monitoring** Liver function tests and men should be screened for prostate cancer serum cholesterol; avoid in patients with markedly impaired hepatic, renal, or cardiac function

MPN Type MF	Indications Anemia		
Agent/Class Danazol/ Androgen[7]	**Patient Characteristics** Not a good candidate for ESA therapy or inadequate response to ESA	**Starting Dose** 200 mg/day up to 600 mg/day for 6 months, then usually 200 mg/day maintenance	**Cautions/Monitoring** Liver function tests and men should be screened for prostate cancer serum cholesterol; avoid in patients with markedly impaired hepatic, renal, or cardiac function
MPN Type **MF**	**Indications** Splenomegaly, thrombocytosis, leukocytosis, bone pain, or constitutional symptoms		
Agent/Class Hydroxyurea/ Antimetabolite[8]	**Patient Characteristics** Temporary control	**Starting Dose** 500 mg every other day to 1000 mg/day	**Cautions/Monitoring** Myelosuppression, anemia, thrombocytopenia
MPN Type **MF**	**Indications** Post-splenectomy hepatomegaly and thrombocytosis (salvage)		
Agent/Class 2-Chlorodeoxyadenosine/ Purine nucleoside analogue[9]	**Patient Characteristics** Progressive hepatomegaly and symptomatic thrombocytosis that develops after splenectomy	**Starting Dose** 0.1 mg/kg per day IV by continuous infusion for 7 days or 5 mg/m^2 IV over 2 hours for 5 consecutive days up to 4 monthly cycles	**Cautions/Monitoring** Myelosuppression
MPN Type **MF**	**Indications** Cytopenias and splenomegaly		
Agent/Class Azacitidine/ Hypomethylating agent[10]	**Patient Characteristics** Cytopenias and splenomegaly or delaying blastic transformation	**Starting Dose** 75 mg/m^2 per day for 7 days	**Cautions/Monitoring** Myelosuppression
MPN Type **ET**	**Indications** Thrombosis prevention		
Agent/Class Hydroxyurea/ Antimetabolite[11]	**Patient Characteristics** High-risk patients (previous history of thrombosis or age >60 years)	**Starting Dose** 500 to 1500 mg/day	**Cautions/Monitoring** Myelosuppression target platelet count of ≤400,000/microL
Agent/Class Anagrelide/ Imidazoquinoline derivative[12]	**Patient Characteristics** High-risk patients (previous history of thrombosis or age >60 years)	**Starting Dose** 0.5 mg po BID adjusted according to platelet response (1 to 4 mg/day maintenance dose)	**Cautions/Monitoring** Headache, palpitations/ tachycardia, fluid retention due to vasodilatory effects; caution in patients with cardiac disease

MPN Type ET	Indications Thrombosis prevention		
Agent/Class α-Interferon/ Immune modulator[13]	**Patient Characteristics** High-risk women of child-bearing age and to those who are pregnant or who have had a prior treatment failure	**Starting Dose** 3 to 5 million units SQ daily	**Cautions/Monitoring** Flu-like symptoms (fever, malaise, nausea, and vomiting), CI depression
Agent/Class Pegylated interferon alpha-2a/ Immune modulator[14]	**Patient Characteristics** High-risk women of child-bearing age and to those who are pregnant or who have had a prior treatment failure	**Starting Dose** 90 mcg SQ weekly	**Cautions/Monitoring** Flu-like symptoms (fever, malaise, nausea, and vomiting), CI depression
MPN Type **ET**	**Indications** Vasomotor symptoms and/or thrombosis prevention		
Agent/Class Aspirin/ Acetylsalicylic acid[15]	**Patient Characteristics** High-risk patients (previous history of thrombosis or age >60 years) and platelets <1 million/microL with hydroxyurea	**Starting Dose** ASA ≤100 mg/day	**Cautions/Monitoring** Bleeding risk: Avoid ASA when platelets >1 million/microL since von Willebrand disease may be present; avoid if history of major bleeding
MPN Type **PV**	**Indications** Thrombosis prevention		
Agent/Class Hydroxyurea/ Antimetabolite[16]	**Patient Characteristics** High-risk patients (previous history of thrombosis or age >60 years)	**Starting Dose** 500 to 1500 mg/day	**Cautions/Monitoring** Myelosuppression
MPN Type **PV**	**Indications** Thrombosis prevention, refractory pruritis		
Agent/Class α-Interferon/ Immune modulator[17]	**Patient Characteristics** High-risk women of child-bearing age and to those who are pregnant or who have had a prior treatment failure	**Starting Dose** 3 to 5 million units SQ daily	**Cautions/Monitoring** Flu-like symptoms (fever, malaise, nausea, and vomiting), CI depression
Agent/Class Pegylated interferon alpha-2a/ Immune modulator[18]	**Patient Characteristics** High-risk women of child-bearing age and to those who are pregnant or who have had a prior treatment failure	**Starting Dose** 90 mcg SQ weekly	**Cautions/Monitoring** Flu-like symptoms (fever, malaise, nausea, and vomiting), CI depression
MPN Type **PV**	**Indications** Vasomotor symptoms and/or thrombosis prevention		
Agent/Class Aspirin/ Acetylsalicylic acid[19]	**Patient Characteristics** ALL patients	**Starting Dose** ASA ≤100 mg/day	**Cautions/Monitoring** Bleeding risk: Avoid ASA when platelets >1 million/microL since von Willebrand disease may be present; avoid if history of major bleeding

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Abbreviations

H/H, Hemoglobin and Hematocrit; MPN, myeloproliferative neoplasms; MF, myelofibrosis ; ET, essential thrombocythemia; PV, polycythemia vera; JAK, Janus kinase; CYP3A4, cytochrome P450/family 3/subfamily A/polypeptide 4; ESA, erythropoiesis-stimulating agents; IV, intravenous; SQ, subcutaneous; ASA, acetylsalicylic acid.