Myeloproliferative Neoplasm: A Diagnostic Approach to Peripheral Blood Evaluation

Clinical suspicion of myeloproliferative neoplasm

Peripheral blood testing begins with:
- Complete blood count (CBC)
- EPO / Erythropoietin (EPO), Serum
- JAK2B / JAK2 V617F Mutation Detection, Blood*
- BADX / BCR/ABL1, Qualitative, Diagnostic Assay OR 922F / BCR/ABL1, Translocation 9;22, FISH (D-FISH)

JAK2 V617F Mutation

POSSITIVE
- CBC
- EPO
- Clinical findings

NEGATIVE OR EQUIVOCAL
- CBC
- EPO
- Clinical findings

PV
- Not supportive of PV

PV possible
- JAKXB / JAK2 Exon 12 and Other Non-V617F Mutation Detection, Blood

NEGATIVE OR EQUIVOCAL
- Clinical suspicion for ET or PMF
- PV
- Bone marrow study indicated

HIGH
- Clinical suspicion for ET or PMF
- Bone marrow study indicated

LOW
- No further testing
- Bone marrow study indicated

POSITIVE
- Clinical suspicion for ET or PMF
- PV
- Bone marrow study indicated

LEGEND

PV: Polycythemia vera
ET: Essential thrombocythemia
PMF: Primary myelofibrosis
MPN: Myeloproliferative neoplasm

* If reflexive testing of JAK2 V617F, CALR, and MPL is desired, consider ordering MPNR / Myeloproliferative Neoplasm (MPN), JAK2 V617F with Reflex to CALR and MPL.