



**Differential Diagnosis of CML**

Disease	Notes
Reactive leukocytosis, leukemoid reactions, or leukoerythroblastic reactions	Not accompanied by splenomegaly, hepatomegaly, or extramedullary disease. Due to infection, inflammation, or metastatic carcinoma. Basophils are rarely increased. The leukocyte differential is the most important initial laboratory test in differentiating CML from other disorders presenting with leukocytosis. Confirm diagnosis of CML by demonstration of t(9;22) or <i>BCR-ABL</i> in blood or marrow.
Myelofibrosis	In CML progressive marrow fibrosis may herald the onset of accelerated disease or blast crisis. Myelofibrosis in CML occurs in two distinct patterns, one in which patients have CML and significant associated marrow fibrosis, and a second in which the myelofibrosis develops late in the course of the CML. Teardrop poikilocytes may indicate myelofibrosis. Absence of t(9;22) or <i>BCR-ABL</i> in "idiopathic myelofibrosis"; present if myelofibrosis is a feature of CML.
Other chronic myeloproliferative disorders, such as polycythemia vera	Patients may show hematologic parameters similar to those of CML, which is one type of chronic myeloproliferative disorder. Transformation of one disorder to another may occur. These disorders share other common characteristics. In CML there are distinctive cytogenetic and molecular abnormalities, but the incidence of an elevated erythrocyte mass in patients, as seen in polycythemia vera, is low.
Essential thrombocythemia	Patients may show hematologic parameters similar to those of CML. Definite diagnosis using criteria of each disorder and absence of t(9;22) or <i>BCR-ABL</i> . The diagnosis of essential thrombocythemia is one of exclusion.
CMML	CMML encompasses features of both chronic myeloproliferative disorders and MDS. Characterized by absolute monocytosis and sometimes marrow trilineage dysplasia; absence of t(9;22) or <i>BCR-ABL</i> .
CNL	More benign clinical course; treatment may not be required. Characterized by neutrophil leukocytosis, normal or high LAP score, and absence of t(9;22) and <i>BCR-ABL</i> .

CML = chronic myeloid leukemia; CMML = chronic myelomonocytic leukemia; CNL = chronic neutrophilic leukemia; GM-CSF = granulocyte-macrophage colony-stimulating factor; JMML = juvenile myelomonocytic leukemia; LAP = leukocyte alkaline phosphatase; MDS = myelodysplastic syndrome.

Table from *Physicians Information and Education Resource (PIER)*, Chronic Myeloid Leukemia module.