LSU Health NEW ORLEANS
Louisiana Tumor Registry

Phases of Chronic Myeloid Leukemia (CML) M9863/3

Chronic Myeloid Leukemia (CML) is classified by **three distinct phases**: **chronic, accelerated and blast**. As the amount of blast cells increases in the blood and bone marrow, there is less room for healthy white and red blood cells, and platelets. This may result in infections, anemia, easy bleeding, as well as bone pain and pain or a feeling of fullness below the ribs on the left side. The number of blast cells in the blood and bone marrow and the severity of signs or symptoms determine the phase of the disease. The World Health Organization (WHO) defines the phases as follows:

CML phase	WHO definition
Chronic stable phase	Peripheral blood blasts fewer than 10% in the blood and bone marrow
Accelerated phase	Blasts 10-19% of white blood cells in peripheral and/or nucleated bone marrow cells ; persistent thrombocytopenia (< 100×10^9/L) unrelated to therapy or persistent thrombocytosis (> 1000×10^9/L) unresponsive to therapy; increasing white blood cells and spleen size unresponsive to therapy; cytogenetic evidence of clonal evolution
Blast crisis	Peripheral blood blasts ≥ 20% of peripheral blood white blood cells or nucleated bone marrow cells; extramedullary blast proliferation; and large foci or clusters of blasts on bone marrow biopsy

According to the SEER Hematopoietic and Lymphoid Neoplasm Database, the chronic phase (CP), accelerated phase (AP) and blast phase/crisis (BP) are **all alternative names** for CML. Meaning that as the disease progresses through the various phases it is still the same disease/histology (M9863/3) and thus the same primary per Rule M2.

For example, a patient was diagnosed in 2008 with CML, chronic phase and was provided treatment. Patient achieved clinical remission after treatment. Then in 2010 was diagnosed with CML, accelerated phase and again was provided treatment. Patient again achieved clinical remission after treatment. Two years later, the patient was diagnosed with CML in blast crisis. According to Rule M2, the case would be abstracted as a single 2008 CML primary.

Keep in mind that the treatment the patient receives will vary depending upon which phase (chronic, accelerated, blast) of CML is present at diagnosis. Treatment by phase includes:

- **Chronic phase:** Tyrosine kinase inhibitor. High-dose chemotherapy with donor stem cell transplant; BRM (interferon). OR Chemotherapy; splenectomy; clinical trial of lower-dose chemotherapy with donor stem cell transplant.
- **Accelerated phase:** Donor stem cell transplant; tyrosine kinase inhibitor; BRM, (interferon (with or without chemotherapy). Chemotherapy may be a single or multi-drug regimen.
- **Blast phase:** Tyrosine kinase inhibitor; chemotherapy (single or multi-drug); BRM (interferon); Donor stem cell transplant

REFERENCES: SEER SINQ 20130086; SEER Hematopoietic and Lymphoid Neoplasm Database; NIH CML PDQ