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CME article

Chronic myeloid leukaemia (CML)

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CML is a myeloproliferative neoplasm (MPN) in which granulocytes are the major proliferative component. It arises in a haematopoietic stem cell and is characterized by the formation of the Philadelphia (Ph) chromosome.

Q1. Regarding cytogenetics and molecular biology of CML,

a) Ph chromosome results from a reciprocal translocation between the long arms of chromosome 9 and 21.

b) The BCR-ABL1 oncoprotein leads to constitutive activation of tyrosine kinase.

c) Monosomy 7 is one of the major route cytogenetic lesion in CML.

d) Conventional karyotype analysis at diagnosis remains important for prognostication.

e) A p230 BCR-ABL1 oncoprotein is commonly seen in CML.

Q2. Regarding the phases of CML,

a) The natural history of CML remains triphasic even after introduction of tyrosine kinase inhibitors.

b) Transformation to blast phase from chronic phase always has an intervening accelerated phase.

c) Criteria for blast phase include the presence of ≥20% lymphoblasts in the peripheral blood or bone marrow.

d) Clonal evolution is noted during the disease progression.

e) Blast phase of CML is morphologically indistinguishable from de novo acute leukaemias.

Q3. A 65-year-old male with a long-standing history of diabetic mellitus, hypertension and hypercholesterolemia is referred to the haematology clinic with a WBC count of $78x10^9$/L (neutrophils + band forms 65%, metamyelocytes 5%, myelocytes 25%, promyelocytes 3% and blast 2%), haemoglobin of 9.2 g/dL and platelet count of 745 x 10^9/L. He denied recent history of febrile illness. He has experienced on and off headache, abdominal distension and early satiety in the recent past. USS abdomen revealed splenomegaly which is 3 cm below the left costal margin. He was investigated extensively and diagnosed as chronic myeloid leukaemia in chronic phase.

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What is the initial treatment you would prescribe for this patient?

a) Dasatinib

b) Hydroxycarbamide

c) Nilotinib

d) Imatinib

e) Ponatinib

Answer grid

Q-1	**T T T T T**	**Q-2**	**T T T T T**	**Q-3**	**T T T T T**
	F F F F F		**F F F F F**		**F F F F F**

CME points: 03

The answers are given in page 41-44 with the explanations.