

## Chronic myelogenous leukemia in ulcerative colitis

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Patients diagnosed with inflammatory bowel disease are known to be at an increased risk of colorectal and liver cancers and of leukemia. In fact, several forms of primary and secondary hematological malignancies were rarely observed during the clinical course of inflammatory bowel diseases.

The causal relationship, if any, remains undetermined. Patients needing a prolonged treatment with immunosuppressants, such as azathioprine or methotrexate, and with a familial and genetic predisposition seem to be at a higher risk of leukemia. Although data so far available is not conclusive it seems that patients with ulcerative colitis have a higher risk for leukemia, particularly acute myelocytic leukemia, compared to Crohn's disease patients [1].

Chronic myelogenous leukemia is a myeloproliferative neoplasm arising at the level of a pluripotent stem cell and consistently associated with the BCR-ABL1 fusion gene. Chronic myelogenous leukemia most commonly manifests in a chronic phase of the disease with neutrophilic leukocytosis.

The diagnosis of chronic myelogenous leukemia requires the presence of BCR-ABL1 (Philadelphia chromosome) while its absence is required for all other myeloproliferative disorders. However, in select cases, the initial diagnosis remains challenging, and a number of issues pertaining to the manifestations and disease evolution remain unresolved.

A 65-year-old patient diagnosed seven years ago with left-sided ulcerative colitis was admitted to the Department of Hematology because of unexplained persisting leukocytosis. The patient was on maintenance treatment with 1.5gr mesalazine and bowel disease was in remission for the last five years. Subsequent hematological investigation revealed chronic myelogenous leukemia at the first chronic phase. In detail, laboratory investigation revealed Hb 10.2g/dL, WBC 43,400/mm<sup>3</sup>, platelets 438,000/mm<sup>3</sup>. Peripheral blood smear showed promyelomonocytes, myelocytes and the characteristic

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“bone marrow appearance”. Philadelphia chromosome was positive and WBC alkaline phosphatase was nearly zero. The patient was started on treatment with imatinib and is currently been followed up in a stable condition.

This is the first case of ulcerative colitis and concomitant leukemia in our cohort of 1,111 IBD patients (838 with UC). Several types of leukemia have been so far reported in patients with ulcerative colitis including chronic myelocytic leukaemia, acute myelocytic leukaemia, acute lymphoblastic leukaemia and acute promyelocytic leukaemia [2]. In rare cases chronic myelocytic leukaemia in ulcerative colitis has been reported in combination with primary biliary cirrhosis [3] or psoriasis [4].

The treatment of patients with chronic myelogenous leukemia continues to evolve rapidly as we gain better insight into the best monitoring strategies and as we gain experience with the second-generation tyrosine kinase inhibitors. Standard dose imatinib remains the best first-line therapy for most patients with first chronic phase myelogenous leukemia. Patient and disease-related factors have to be evaluated when considering alternatives such as higher doses of imatinib, dasatinib, nilotinib and allogeneic transplant. The course of bowel disease after allogeneic transplant seems to be quiescent in cases that have been so far reported [5]. To conclude, this is the first case of a patient with ulcerative colitis and leukemia in the northwest Greece IBD cohort.

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