Adult T-cell Leukemia-Lymphoma with CLL-like morphology - First Case from Western Hemisphere

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Introduction

Adult T cell leukemia/ lymphoma (ATL) is a highly aggressive T cell neoplasm, with a mean survival of less than 12 months. The clinical subtype determines the prognosis, with patients in chronic phase having a median survival of 2 years. The chronic and smoldering subtypes are considered indolent and are usually managed with watchful waiting until disease progression, analogous to the management of some patients with chronic lymphoid leukemia (CLL) or other indolent histology lymphomas. ATL with CLL like morphology is a rare disease entity, previous reported in only seven patients by Tsukasaki et al. To the best of our knowledge, there is no such case reported from the western hemisphere. We present a case of chronic T-cell leukemia with CLL like morphology that remained untreated for ten years and developed acute ATL crisis after 10 years.

Case

A 57 year old man diagnosed with T cell leukemia 10 years previously, presented in the outpatient clinic with worsening abdominal distension. He was originally diagnosed with this T-cell disorder based on leukocytosis with lymphocytosis, 21300 cu.mm and presence of relatively uniform lymphocytes with mild abnormality in the nuclear shape, prominent central nucleoli & scant cytoplasm, expressing CD2, CD3, CD4 and CD5 but lacking CD8, CD19, CD20, CD56 and CD57 on flow-cytometry. CLL like small mature lymphocyte morphology was observed in more than 70% of the cell examined. The patient stayed asymptomatic from his disease for over 10 years with no evidence of anemia, thrombocytopenia, splenomegaly or palpable lymphadenopathy.

Laboratory results at admission showed leukocytosis 281,900 with deranged LFTs, elevated LDH, 330, albumin 1 , BUN 31 and calcium, 13.9. CT abdomen revealed mild hepatosplenomegaly with generalized lymphadenopathy. Peripheral blood smear showed medium to large lymphoid cells showing convoluted nuclei, coarsely clumped chromatin and basophilic scant cytoplasm with occasional floret forms and blast cells. These flower cells with polylobulated nuclei were also found in the ascites fluid. Immunophenotyping revealed an abnormal T cell population expressing CD2, CD4, CD5 and CD25 with absent CD7. EIA detected virus specific serum antibodies to HTLV-1 which were later confirmed by Western blotting, thus confirming the diagnosis of ATCL. The patient started chemotherapy with CEOP regimen, considering his EF 35% on Trans-Thoracic Echocardiography, but continued to deteriorate clinically, eventually succumbing to his disease within four months of treatment.

Discussion

ATL cells in peripheral blood (PB) are usually characterized by having highly indented or lobulated nuclei with homogenous and condensed chromatin, small or absent nucleoli and agranular and basophilic cytoplasm. However, the diversity of morphology in ATL is well established. Several cases with unusual morphological features of ATL cells have been reported. In addition to polylobed cells, some blastic cells with basophilic cytoplasm are almost always seen in blood films of ATL. ATL with CLL- like morphology is rare, but has been reported to have a longer transformation-free survival in a Japanese study by Tsukasaki et al . It was reported that cases with more than 50% CLL-like cells (n -7, all chronic type) were younger (53.1 +/- 12.2 v 66.9 +/- 10.6 years; P = 0.038) and showed longer acute-crisis free survival (mean: 16.7 v 3. 0 years; P = 0.012) than chronic cases with less than 50% CLL-

like cells. The authors went on to suggest that CLL-like-ATL may be an earlier phase of ATL leukemogenesis would appear to be a good prognostic factor for chronic type. The behavior of ATL in our case further substantiates the thought that cell morphology is closely associated with genotype, phenotype and clinical picture of ATL.

Treatment decisions for these patients are usually based on the ATL sub classification and the prognostic factors at onset. However, there is no clear consensus about whether or when to initiate treatment in patients with indolent or chronic ATL. Ishitsuka et al reported that over half of their study patients with smoldering ATL (14/26) remained alive without transformation for a median follow-up of 6.5 years. The results of a recent worldwide meta-analysis on the use of AZT/IFN for ATL showed that first-line AZT/IFN- therapy in chronic- and smoldering-type ATL resulted in 100% OS at a median follow-up time of 5 years, hence opening the debate as to whether 'watchful waiting' is the right treatment choice in these patients. Treatment for ATL by AZT and interferon-α might be promising, but further studies are required to validate the effectiveness and to elucidate the mechanism.