CORRESPONDENCE

Modified Hyper-CVAD Regimen Followed by Autologous Peripheral Blood Stem Cell Transplantation Successfully Treated Synchronous T-Cell Prolymphocytic Leukemia and Gastric Cancer in a 68-Year-Old Female

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Dear Editor,

T-cell prolymphocytic leukemia (T-PLL) is a rare mature T-cell postthymic neoplasm primarily involving bone marrow, peripheral blood, lymph nodes and spleen, which is characterized by poor response to conventional chemotherapy and short median survival [1]. Until now, just one case reported an elderly female diagnosed as T-PLL and died from gastric cancer [2]. However, the clinical features and treatment of that case were unknown. Here we report an old female case of CD8 positive T-PLL developing synchronously with gastric cancer successfully treated by modified Hyper-CVAD followed by autologous peripheral blood stem cell transplantation (APBSCT).

A 68-year-old female was admitted to our hospital with low fever, anorexia, weakness and loss of weight on July 4, 2014. She had no past history of gastro-enterological malignancies. The blood test showed white blood cell count was $42.26 \times 10^9/l$ with 63% prolymphocytes, hemoglobin was 7.19 g/dl, platelet count was $341 \times 10^9/l$. Bone marrow (BM) aspirate showed markedly increased number of medium-sized prolymphocytes. BM flow

cytometry analysis showed 69.5% lymphocyte positive for CD2, CD3, CD5, CD7, CD8, TCR α/β , and negative for CD19, CD25, CD69, CD38, TdT and HLA-DR. Cytogenetic analysis showed 46, XX. PCR detection showed positive TCR β and TCR γ rearrangement, and negative IGH, IGK and IGL rearrangement. Interphase fluorescence chromosomal in situ hybridization (FISH) of BM cells showed no abnormalities. Contrast-enhanced computed tomography (CT) of the abdomen revealed increased thickness of gastric wall in gastric antrum indicating gastric malignancies. The following gastroscopic biopsy suggested adenocarcinoma of gastric angle. Based on these findings, a diagnosis of concurrent CD8 positive T-PLL and gastric adenocarcinoma was made.

At first, she received two cycles of modified Hyper-CVAD chemotherapy. Subsequently, blood and BM tests showed complete remission. Then she underwent radical gastric cancer operation. Post-operative pathological examination revealed ulcerated adenocarcinoma of I-II grade at the size of 5.0×3.5 cm, moderately differentiated. After two cycles of modified hyper-CVAD regimen as consolidation therapy, peripheral hematopoietic stem cells were mobilized with cyclophosphamide and followed by granulocyte-colony stimulation factor (G-CSF). The CD34⁺ cells collected was $3.1 \times 10^6/kg$. One month later, she received APBSCT after a dose-reduced conditioning regimen BEAM. She was still doing well on the last follow up in May 2016.

Nowadays, the best regimen of T-PLL treatment is alemtuzumab (an anti-CD52 monoclonal antibody) followed by consolidation with hematological stem cell transplantation (HSCT). This approach has led to an extension of the median survival from 7 months in some historic series treated with conventional chemotherapy to more than 4 years [3]. Both autologous and allogeneic

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HSCT in patients who achieve remission have been used and are associated with more durable outcomes [4]. Clinical studies have revealed bendamustine regimen or fludarabine/mitoxantrone/cyclophosphamide (FMC) followed by alemtuzumab is effective in T-PLL [1]. However, alemtuzumab is expensive and bendamustine is not available, hence this regimen is not possible. Fortunately, Hyper-CVAD which is widely used in acute lymphoblastic leukemia and aggressive lymphomas, has favorable outcome with a high CR rate and long survival in T-PLL.

In conclusion, we report the first Chinese case of synchronous T-PLL and gastric cancer. This case reveals that modified Hyper-CVAD based induction strategy followed by consolidative APBSCT is a safe and feasible regimen for elderly transplant eligible T-PLL patients, with outcomes comparable to the published literature.

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Compliance with Ethical Standards

Conflict of interest The authors have stated that they have no conflicts of interest.

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