Bendamustine induced tumor lysis syndrome with acute renal failure in chronic lymphocytic leukemia

Sir,

A 52 year male presented with right axillary and bilateral inguinal lymph node enlargement. Liver and spleen were palpable 6and 12cm below costal margin respectively. His Hemoglobin was 7.2 g/dL and total leukocyte count (TLC) was 91.6 × 10^9/L and platelet of 7 × 10^9/L. He was diagnosed as chronic lymphocytic leukemia (CLL) Rai stage four. In view of active hepatitis B it was decided to give first chemotherapy with bendamustine alone.

Patient was administered chemotherapy with bendamustine 100 mg/m^2 on days one and two with baseline urea 25.7 mg/dl (range 15-38 mg/dl), creatinine 0.7 (range 0.6-1.3 mg/dl), uric acid 2.8 (range 2.6-7.2 mg/dl) along with hydration 3L/m^2 and allopurinol. Four days after the treatment patient presented with pain all over the body. CBC showed a TLC

38.4 × 10^9/L. Investigations revealed urea 94.2 mg/dl, creatinine 2.2 mg/dl, uric acid 11.4 mg/dl (2.6-7.2), calcium 7.2 mg/dl (8.2-10.2 mg/dl), phosphorus 5.9 (2.5-4.6 mg/dl). Liver function tests were normal. Blood and urine cultures were sterile. Naranjo ADR probability score (for determining whether an adverse reaction is actually due to the drug rather than the result of other factors) was nine suggesting definite association with bendamsutine.[1] A diagnosis of tumor lysis syndrome with non-oliguric acute renal failure was made. He was treated with hyperhydration and single dose of rasburicase 1.5 mg. Four hours later uric acid dropped to 5.3 mg/dl. Next day creatinine came down to 1.1 mg/dl, urea to 57.8 mg/dl, and the following day urea dropped to 27.8, creatinine to 0.8, uric acid to 1.9 and remained low during subsequent days. Four weeks later he received 2nd cycle of chemotherapy with bendamustine and rituximab. He tolerated chemotherapy well this time without any evidence of tumor lysis syndrome.

Bendamustine with rituximab rgimen is generally considered safe and has been used in the treatment of advanced or relapsed CLL with an acceptable side effect profile.[2] Knauf *et al*. reported 1.2% incidence of tumor lysis without mention of any renal failure.[3] Another study reported only one patient who had preexisting renal dysfunction to develop TLS.[4] Hummel *et al*. reported a case of recurrent chemotherapy-induced TLS with renal failure in one patient with CLL.[5] Our patient had high pre treatment WBC, multiple enlarged nodes, hepato-splemegaly suggesting high tumor burden.

The occurrence of tumor lysis in patients with CLL warrants a close monitoring for tumor lysis specially those presenting with high leukocyte counts.

Naithani R, Bhat A, Bhasin A[1]

Division of Bone Marrow Transplantation and Hematology, [1]Department of Medical Onclolgy, Nephrology, Max Hospital, Delhi, India

Correspondence to:
Dr. Rahul Naithani, E-mail: dr_rahul6@hotmail.com

References

1. Naranjo CA, Busto U, Sellers EM, Sandor P, Ruiz I, Roberts EA, *et al*. A method for estimating the probability of adverse drug reactions.Clin Pharmacol Ther 1981;30:239-45.
2. Fischer K, Cramer P, Busch R, Stilgenbauer S, Bahlo J, Schweighofer CD, *et al*. Bendamustine combined with rituximab in patients with relapsed and/or refractory chronic lymphocytic leukemia: A multicenter phase II trial of the German Chronic Lymphocytic Leukemia Study Group. J Clin Oncol 2011;29:3559-66.
3. Knauf WU, Lissichkov T, Aldaoud A, Liberati A, Loscertales J, Herbrecht R, *et al*. Phase III randomized study of bendamustine compared with chlorambucil in previously untreated patients with chronic lymphocytic leukemia. J Clin Oncol 2009;27:4378-84.
4. Bergmann MA, Goebeler ME, Herold M, Emmerich B, Wilhelm M, Ruelfs C, *et al*. Efficacy of bendamustine in patients with relapsed or refractory chronic lymphocytic leukemia: Results of a phase I/II study of the German CLL study group. Haematologica 2005;90:1357-64.
5. Hummel M, Buchheidt D, Reiter S, Bergmann J. Recurrent chemotherapy-induced tumor lysis syndrome (TLS) with renal failure in a patient with chronic lymphocytic leukemia – successful treatment and prevention of TLS with low-dose rasburicase. Eur J Haematol 2005;75:518-21.

Access this article online

Quick Response Code:

Website: www.indianjcancer.com

DOI: 10.4103/0019-509X.146740