

中文題目：急性前體 B 細胞淋巴細胞白血病併發腎臟腫大暨急性腎衰竭
英文題目：Acute precursor B cell lymphoblastic leukemia complicated with acute kidney injury with nephromegaly
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Abstract

Bilateral renal enlargement is a very unusual manifestation with acute lymphoblastic leukemia. We report a case of a male with acute precursor B cell lymphoblastic leukemia presenting with enlarged bilateral unobstructed kidneys and acute renal failure. In computed tomography (CT) of abdomen examination, massively enlarged bilateral unobstructed kidneys with normal shape strongly suggested an infiltrative process of renal parenchyma. This case is interest because of the rarity of this presentation.

Case Report:

A 24-year-old male Philippians was admitted to this hospital because of swelling of legs for 2 weeks. He was diagnosed of acute precursor B cell lymphoblastic leukemia status post induction chemotherapy with GRAALL-2003 protocol, consolidation chemotherapy with Ara-C and Methotrexate, and then disease got refractory with nasopharynx involvement status post salvage chemotherapy with Blincyto (the patient refused ICE regimen), under partial remission status. On physical examination, the patient's blood pressure, pulse rate, respiratory rate, and body temperature were 121/80mmHg, 113 beats/minute, 19 breaths/minute, and 37.1 Celsius degree, respectively. Bilateral pre-tibial region grade IV pitting edema and symmetric palpable masses of bilateral kidney region were also presented.

In computed tomography (CT) of abdomen examination (Figure.1), splenomegaly and massively enlarged bilateral unobstructed kidneys with normal shape strongly suggested an infiltrative process of renal parenchyma.

Laboratory data showed the following values: leukocyte count was $35.74 \times 10^3/uL$ (neutrophils 81.7%, lymphocytes 3.6%, metamyelocytes 3.7%, band neutrophils 2.4%, immature cell 4.9%), hemoglobin 9.1g/dL, thrombocytes $97 \times 10^3/uL$, blood urea nitrogen 69mg/dL, serum creatinine 8.2mg/dL, sodium 115 mmol/L, potassium 4.6 mmol/L, AST 165U/L, Albumin 3.3g/dL, chloride 77mmol/L, free calcium 4.33mg/dL, Troponin-I 65pg/ml, PT 10.7 seconds, INR 1.0. Urine microscopy revealed detectable proteinuria. Spotting urine showed the following values: protein concentration 89mg/dL, Creatinine 52.9mg/dL, urea nitrogen 148mg/dL, sodium 46mmol/L, potassium 16.5mmol/L, chloride 49 mmol/L, calcium 1.1 mg/dL, osmolality 193 mOs/kg H₂O, microablumin 5.7mg/dL.

The final diagnosis of refractory acute precursor B cell lymphoblastic leukemia complicated with lymphocytic infiltration in kidneys and acute kidney injury was made. The patient received emergency hemodialysis for fluid overload. Unfortunately, the disease progressed rapidly, complicated with cytomegalovirus bacteremia and multiple organ dysfunction. The patient was died 10 days after admission.

Discussion:

Acute kidney injury (AKI) is quite common in patients with hematologic malignancy, contributing to increased morbidity and mortality. The kidney is the most common extrareticular and extrahematopoietic organ infiltrated by leukemia and lymphoma, with infiltration seen in 60% to 90% of patients with hematologic malignancy. Kidney failure resulting from infiltration is thought to be secondary to acute tubular compression and disruption of the kidney microvasculature from increased interstitial pressure leading to ATN.

Though kidney infiltration with nephromegaly is rare in adult leukemia patients, it is still a potential cause to acute kidney injury of the patient with hematological malignancies. Leukemia and lymphoma with nephromegaly also implies the active status of the disease, and it may be a role contributing to poor prognosis.

Figure.A

