

CASE 3

The following is the case of a 7-year-old girl. We can call this patient, Jenny. When I first met Jenny, she presented with a recent history of abdominal pain, abdominal distention, constipation, and decreased appetite.

She had been well up until about 4 weeks prior to presentation when she noticed a protuberance in her abdomen, decreased appetite, constipation, and abdominal pain.

Her physical examination demonstrated a distended and tender abdomen, as well as an abdominal mass and inguinal adenopathy. She had no evidence of hepatosplenomegaly.

Initial laboratory studies demonstrated a normal CBC with a white blood cell count of 6400, hemoglobin of 11.1 g/dL, and a platelet count of 175,000. Serum chemistries showed a uric acid level of 8.7, phosphate level of 10.0, potassium level of 4.8, a creatinine level of 3.0, and an LDH of 3500.

An abdominal ultrasound indicated a large abdominal mass measuring 10 x 12 centimeters, renal tumor infiltration, and mild splenomegaly. An excisional biopsy was also performed and the resulting diagnosis was Burkitt's Lymphoma with typical cytogenetic features, that is the 8; 14 translocation.

Clinical investigation confirmed she had Burkitt's lymphoma, and this particular diagnosis, combined with her serum chemistries, put her at high risk for the development of TLS. In order to initiate chemotherapy as soon as possible, we first started the patient on hydration to alleviate her TLS risk with IV saline (3L/m²/day), aluminum hydroxide (as Amphogel), and *ELITEK* for uric acid reduction at a dose of 0.2 mg/kg/day x 5 days.

After 4 hours of this therapy, she was then started on cyclophosphamide, vincristine, and prednisone reduction chemotherapy also known as the COP regimen.

At this point, her chemistry profile demonstrated a uric acid level of 3.2, a phosphate level of 8.6, a potassium level of 3.6, and a creatinine level of 2.1.

After 24 hours, her chemistry parameters continued to improve and demonstrated a uric acid level of 1.8, a phosphate level of 6.0, a potassium level of 4.0, and a creatinine level of 1.6.

And after 48 hours, all chemistries exhibited substantial reductions. Her uric acid level was 1.0—an 88.6% reduction from baseline—phosphate was 4.2, potassium was 4.1, and creatinine was 1.1.

After multi-agent chemotherapy, LDH, levels decreased from 3500 to 900 in 48 hours—a 74% reduction from baseline.

Jenny continued on her chemotherapy as scheduled.