

CASE 1

One patient case of interest is one that involves an 8-year-old boy. We'll call him Tommy.

When I first saw Tommy, he presented with a history of fevers, weight loss, bleeding under his skin as well as in the mouth, mucosa, and pallor.

The patient had been in excellent health up until 2 weeks before his admission, at which point he developed signs of skin petachiae, decreased appetite, intermittent fevers, and decreased energy.

Upon examination, the patient showed significant and widespread petachiae and pallor. He also presented with evidence of splenomegaly and abdominal distention.

We conducted a thorough laboratory investigation which revealed a white blood cell count of 25,000, hemoglobin of 4.6 g/dL, and a platelet count of 4,000. The white blood cell differential showed 20% myeloblasts, 10% myelocytes, 30% lymphocytes, 10% monocytes, and 30% neutrophils. Serum chemistries showed a uric acid level of 7.5, phosphate was 11.0, potassium was 4.6, serum creatinine was 2.6, and LDH was 880.

Due to the nature of Tommy's symptoms, a bone marrow aspirate and biopsy were performed. Results revealed a bone marrow picture consistent with acute myeloid leukemia. And we wanted to start chemotherapy promptly.

His cancer diagnosis combined with his white blood cell count and uric acid level put him at a potential—or intermediate— risk for TLS.

Due to the nature of his TLS risk, we started him on hydration with IV saline along with *ELITEK* for uric acid reduction and aluminum hydroxide (as Amphogel). We conducted frequent serum monitoring and initiated chemotherapy with Ara-C and doxorubicin.

After just 4 hours, the serum chemistry tests demonstrated a uric acid level of 1.8, while phosphate was 7.2, potassium was 4.8, and creatinine was 1.6.

On Day 2, Tommy's uric acid level was 2.0, phosphate was 6.1, potassium was 4.6, and creatinine was 1.2.

On Day 3, the uric acid was reduced to 1.9, phosphate was 4.6, potassium was 4.1, and creatinine was 0.7. All chemistries demonstrated reductions from baseline, most notably, uric acid, which exhibited a 75% reduction from baseline.

In this case, the risks for TLS were mitigated right from the start, and chemotherapy continued, uninterrupted.