Uzbekistan Children Died from Unregulated Cough Syrup
Continued from cover

As a deputy editor of *Kidney360*, Perazella wrote an accompanying editorial: “Hiding in Plain Sight: Catastrophic Diethylene Glycol Poisonings in Children” (4).

The poisoning cascade

DEG poisoning tends to start with gastrointestinal symptoms, including nausea, vomiting, abdominal pain, and diarrhea. The most prominent clinical manifestation is nephrotoxicity, causing acute kidney injury (AKI) and anion gap metabolic acidosis, Perazella said. As in Uzbekistan, patients then experience neurological problems, which can include encephalopathy, multiple peripheral and cranial neuropathies, and muscle weakness in all limbs. Oxygen levels drop, and patients become comatose and may die.

In the Uzbekistan children, 46 of the 50 were placed on ventilators.

Overall, the National Children’s Medical Center, in which Murtalibova practiced, treated approximately 73 patients. Only two of them died at the hospital, she said. She credits the lower mortality rate to clinicians who quickly collaborated and brainstormed on how to adequately care for these children who were acutely ill. “In my hospital, we involved all specialists for treatment of these patients, including neurologists, pulmonologists, and ENT [ear, nose, and throat] doctors, and we had the opportunity to provide MRIs [magnetic resonance imaging] for these patients,” she told *Kidney News*.

Many of the children became comatose, and the physicians did not know why. The MRIs revealed posterior reversible encephalopathy syndrome. A neurologist recommended that the children be treated with the osmotic diuretic mannitol, which can lower pressure and swelling in the brain, and with intravenous immune globulin (IVIG). “I think the main difference between the treatment from the two hospitals in Tashkent was the use of IVIG,” Murtalibova said.

During the outbreak, the National Children’s Medical Center received resources, including hemodialysis filters, through Murtalibova’s involvement in the International Pediatric Nephrology Association (IPNA). She is a mentor through the IPNA Junior Empowerment and Mentorship Program and sought support from her mentors.

After the children’s urinary function was restored, Murtalibova said urine analyses showed that most of the children had calcium oxalate dihydrate crystals. These can be caused by ethylene glycol, another contaminant that may have been in the medication.

A call to action and awareness

Murtalibova wants her paper to raise awareness and spur a call to action regarding the lack of drug regulations, which can lead to severe illness and death, in resource-limited countries. “Last year was a very, very sad year for Uzbekistan,” she said. “We lost so many children because we just did not know why this was happening.” Once the cough syrup was identified as the cause of the severe illness, government officials warned people not to use it and directed pharmacists to remove it from shelves. (It is unknown whether the Indian manufacturer faced any consequences.)

Murtalibova said physicians in Uzbekistan know about safer, regulated drugs from regions, such as the United States and Western Europe, but their patients cannot afford these medications. “They’re very expensive, so we cannot prescribe them. Indian drugs are cheaper…but my goal is to increase the awareness that these kinds of things can happen when we use these kinds of drugs.”

Creating or improving the drug regulatory process in resource-limited countries is an uphill battle, Perazella said. “It’s all about finances and income and poverty, and unfortunately, where this is happening is in countries that don’t have a lot of money, so they can’t have rigorous oversight like the US FDA [Food and Drug Administration] and the European Union,” he said. Because of this disparity among countries, Murtalibova said, it is critical that the global nephrology community—not only those in resource-limited countries—become aware of these toxic effects so clinicians can act fast to save lives.

Pediatric nephrologist Howard Trachtman, MD, FASN, adjunct professor of pediatrics at the University of Michigan, was horrified to hear of these deaths. He won a call to action regarding the lack of drug regulations, which can lead to severe illness and death, in resource-limited countries. “Last year was a very, very sad year for Uzbekistan because ‘we’ve known about this for a long time. We’ve seen it happen time and time again, yet nothing seems to happen. Here it is in [2024], and these [unfortunate] children in Uzbekistan and the surrounding areas are dying and suffering serious complications of contamination of products. It just shouldn’t happen.”

In November 2023, after her paper was published online, Murtalibova attended the 15th Asian Congress of Pediatric Nephrology in Dubai, United Arab Emirates. A pediatric nephrologist from Bangladesh pulled her aside to discuss her paper. He told her that he had experienced a similar outbreak in his country, in which children were also poisoned by cough syrup with DEG. That outbreak occurred in 1992—over 30 years earlier.

References

5. The Policy Update “Achieving Kidney Health in a Warming World” by Zachary Kribs published in May 2023 Kidney News includes the statement, “Perhaps the greatest opportunity to improve the environmental impact of existing therapies for people with kidney failure is to reduce the water usage in dialysis. Globally, dialysis requires enough medically pure water to fill Lake Tahoe annually.” This estimate of the global water usage in dialysis is no longer believed to be accurate. A more accurate statement is that, globally, 265 billion liters of medically pure water is estimated to be used in dialysis every year, enough to fulfill the United Nations-recognized water needs of between 7 and 15 million people (1, 2).