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T.P. was a 66 year old white female who was referred to the University Hospital for evaluation of coma. The patient's family reported that she had had some abdominal distress 4 days prior to admission, which had resolved. The day prior to admission she had recurrent nausea, vomiting, and headaches. On the day of admission the patient was found lying on the floor near a bottle of beer, a bottle of aspirin, and a bottle of Librium. All the pills apparently were accounted for. The patient was taken to a local hospital where she was found to have an arterial pH of 7.0 and a bicarbonate of 7 meq/L. Urinalysis revealed a pH of 5, trace albumin, rare white blood cells, and a few calcium phosphate crystals. The patient was transported to the University Hospital via helicopter. Past medical history revealed that the patient had no other medical illnesses, but had had paranoid ideation intermittently for 15 to 20 years. This had increased in the past 2 years, according to the family. The patient was a widow. Medications included Librium 10 mg. t.i.d. as needed for nervousness.

On admission to the Medical Center the patient was comatose with flaccid muscular tone. There were no spontaneous movements; however, the patient did have purposeful responses to deep painful stimuli. Pupils were 2 millimeters equal, round, and reactive to light. Respirations were Cheyne-Stokes. There was no nuchal rigidity. Lungs were clear to auscultation and percussion. Heart examination was significant only for tachycardia. Abdominal examination was normal. Reflexes were 1+ bilaterally and symmetrical. Plantar reflexes were downgoing. Admission hemoglobin was 16.2 gm%, white blood count 20,500, differential included 2% bands, 88% polys, 6% lymphs, and 4% monos. Electrolytes included a sodium of 151 mEq/L, potassium 3.9 mEq/L, chloride 111 mEq/L, CO₂ 6 mEq/L, BUN 10 mg%, creatinine 1.2 mg/dl, glucose 159 mg/dl. Repeat urinalysis with a Foley catheter in place revealed many RBC and trace protein. Serum osmolality was 304.

The patient was admitted to the Medical Intensive Care Unit for evaluation and treatment of coma and metabolic acidosis. Urine, serum, and gastric aspirate were collected for toxicology evaluation, revealing trace benzodiazapine metabolites in the urine but no evidence of methanol, paraldehyde, ethylene glycol, barbiturates, tricyclic antidepressants, or narcotics. Serum salicylate level was 1.4 (nl = 0.0 mg/dl), serum lactate level was 23 (nl = 4-20 mg/dl), serum ketones were negative. The patient required large doses of sodium bicarbonate with mild improvement in her acid base status. She continued, however, to have a high anion gap metabolic acidosis. A few hours after admission the patient no longer responded to deep painful stimuli and her oculocephalic reflex was no longer present. Blood pressure was maintained with pressor agents. Her subsequent course was complicated by an anterior MI and grand mal seizures, treated with Dilantin. 36 hours after admission, severe refractory hypotension developed. Despite extensive resuscitation efforts, she expired.

General autopsy findings revealed a diffuse acute bronchopneumonia and changes of acute tubular necrosis in the kidneys with amorphous crystalline deposits in the proximal tubules. Brain weight was 1190 gms. The meninges were congested. The brain was diffusely edematous and dusky, with bilateral uncal herniation and incipient tonsillar herniation. Posterior fossa structures were extremely soft. No discrete lesions were seen.

Material submitted: One H&E slide from cortex and underlying white matter, thalamus, pons, or cerebellum.

Points for discussion: Diagnosis
Pathogenesis