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ABSTRACTS

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treatment and repeated the intake of four tablets every week during 6 months. Two weeks before admission, she increased the dosage to four tablets a day. She was brought to the emergency department (ED) by her husband because of vertigo, somnolence, speech problems, and abnormal movements of 4 days duration. Her husband said that she was confused and disoriented in time. On examination, she was effectively confused and apathetic, with a slow and dysarthric speech. She presented myoclonia of the hands. The electroencephalogram (EEG) showed generalized slowing and depressed reactivity. The computed tomography (CT) scan and the magnetic resonance imaging (MRI) were within normal limits. The dermatologist confirmed the absence of scabies and the presence of scratch lesions on hands and feet. The patient did not take ivermectin on the day of admission. She was advised to immediately stop ivermectin and she was treated with cetirizine against pruritus. Two days after stopping ivermectin, the neurological symptoms improved. The victim could leave the hospital 3 days after the last ivermectin intake.
Conclusion: Persistent pruritus after scabies can lead patients to unduly prolong their treatment. With ivermectin, this misuse can result in encephalopathy. After stopping the medication, symptoms improved within a few days, which corresponds to the ivermectin half-life of 18 h. We did not find in the literature any similar case of prolonged ivermectin overdose.

67. Chlorine dioxide from a dietary supplement causing hemolytic anemia

Vincent Nguyen[1,2], Robert S Hoffman[1,2], Lewis S Nelson[1,2]

[1]*Department of Emergency Medicine, New York University School of Medicine, New York, USA;* [2]*New York City Poison Control Center, New York, USA*

Objective: Miracle Mineral Solution (MMS) has been marketed as an alternative treatment for HIV, hepatitis, common colds, acne, cancer, and other conditions. However, MMS, a 28% sodium chlorite solution that produces chlorine dioxide when mixed with its acidic "activator", carries serious health risks. Despite warnings from multiple national agencies, including the Food and Drug Administration (FDA) in 2010, many hopeful patients still use this product. We report a unique case of severe hemolytic anemia after use of MMS.
Case report: A 75-year-old man with a history of stage IV prostate cancer on monthly leuprolide presented with worsening fatigue, shortness of breath, and lightheadedness, 7 days after ingesting MMS that he purchased over the Internet. The patient stated that he used 100 drops (~5 mL) of the MMS with the activator, more than the recommended 1–3 drops, with hopes of increased efficacy. Four hours later, he developed abdominal pain and vomiting. These symptoms slowly abated over the next 2 days, but he began to develop worsening fatigue. Systemic examination was unremarkable. Investigations revealed a hemoglobin concentration of 5.5 mg/dL (from a baseline hemoglobin of 10.5 mg/dL), lactate dehydrogenase of 1491 U/L, and haptoglobin < 10 mg/dL. The patient was supported with blood transfusions and recovered fully. He was advised to discontinue the use of this supplement and the adverse event was reported to the FDA.
Conclusion: Chlorine dioxide has been linked to acute hemolysis, methemoglobinemia, and kidney failure due to its oxidant properties. MMS is not approved in the US for the treatment of any disease and according to the FDA, "consumers who have MMS should stop using it immediately and throw it away." To date, there have been no other case reports of MMS causing severe, symptomatic hemolysis. It is thus important to note that patients who consume MMS can manifest severe, symptomatic hemolysis.

68. Methemoglobinemia in long term dapsone treatment

Radu Macovei[1], Ilenuta Danescu[1], Genica Caragea[2], Mihai Ionica[2]

[1]*ICU II Toxicology, Emergency Clinical Hospital, Bucharest, Romania;* [2]*Army Center of Medical Research, Bucharest, Romania*

Objective: Methemoglobinemia is a hematological disorder clinically characterized by the bluish color of the extremities, general manifestations and even death at high blood levels of methemoglobin (MetHb). One of the most commonly used sulfones in cutaneous problems is dapsone. Dapsone is metabolized by the liver and N-hydroxylation results in its metabolite aminohydroxylaminodiphenylsulfone which can induce methemoglobinemia, hemolytic anemia and Heinz body formation. We present a case of dapsone induced methemoglobinemia.
Case report: A 43-year-old woman, with systemic vasculitis and cutaneous lesions, treated with dapsone 100 mg/day for 4 months was admitted after a fainting episode and diarrhea. On admission we found a weak and anxious patient with cyanosis of the extremities and livedo reticularis of the legs, intense cephalea, dizziness, and nausea; she was tachypneic, with non-invasive blood pressure (NBP) = 100/50 mmHg, tachycardia 125 b/min, and pulse oximetry 72%. The investigations showed anemia (Hb 10.9 g/dL, Ht 31.4%), high blood levels of MetHb (23.2%), low levels of oxygen blood pressure and high levels of blood CO_2 ($pO_2 = 29.8$ mmHg and $pCO_2 = 46.9$ mmHg), total bilirubin = 1.9 mg/dL with indirect bilirubin higher. The first therapeutic action was stopping the agent that caused the methemoglobinemia and starting oxygen therapy. Methylene blue 1 mg/kg was administered intravenously, along with ascorbic acid 1 g and volume repletion. The patient's symptoms disappeared and the level of MetHb after 2 h was 4.4%. The patient was discharged after 3 days, with MetHb = 1.2%, Hb = 11.7 g/dL and normal bilirubin level. She was advised not to use dapsone for her cutaneous problems.
Conclusion: Methemoglobinemia is a rare disease, with complete recovery in mild forms. The most common cause of acquired methemoglobinemia is drugs. In our case methemoglobinemia was secondary to a usual dose of dapsone. Early diagnosis of methemoglobinemia and discontinuation of dapsone administration with the establishment of specific therapy allowed the remission of methemoglobinemia manifestations without complications.

69. Medication errors in the first 6 months of life

Valeria M Petrolini, Elena Borlenghi, Giulia Scaravaggi, Sarah Vecchio, Andrea Giampreti, Francesca Chiara, Emanuela Cortini, Marta Mazzoleni, Monia Aloise, Marta Crevani, Carlo A Locatelli

Pavia Poison Control Centre and National Toxicology Information Centre, IRCCS Maugeri Foundation, Pavia, Italy

Objective: Medication errors (ME) represent a threat to health both at home and in the hospital setting. Newborns and infants constitute a group of patients at high risk of developing severe clinical effects, because of their low weight and physiological characteristics. There is, anyway, a lack of data concerning drug toxicity in newborns and infants. The objective is to evaluate ME in the first 6 months of life which come to the attention of Pavia Poison Center, and to identify major risks and to focus on corrective actions.
Methods: A 6-year retrospective study (2007–2012) was performed; all the cases of ME in infants younger than 6 months referred to our poison control center (PCC) were evaluated. Data about patients and intoxication circumstances were collected and analyzed.
Results: 561 cases were analyzed. One hundred and fifty out of 561 patients (26.8%) were less than 1-month old. Fifty-five per cent of errors occurred between 4 and 12 pm. Most of the events (89.8%) consisted of administration errors by relatives, whereas 10.2% were iatrogenic. In 52.9% of cases (257/561) a drug different from the prescribed one was given; in 39.5% (222/561) the administered dose was wrong; in 23/561 (4%) the mistake was regarding the administration route. Preparation errors of drugs occurred in 15 cases, whereas expired drugs were given in 4 cases. The drugs most involved were vitamins (n = 70), gastrointestinal drugs (n = 69), paracetamol (n = 67), methylergometrine (n = 63), antibiotics (n = 55). Symptoms occurred in 104/561 patients (18.5%), and were mainly neurological (agitation in 18.1%, drowsiness in 36.1%) and gastrointestinal (vomiting in 16.2%, diarrhea in 9.5%, abdominal colic in 6.7%). 12.5% of patients showed tachycardia and 67% had unexplained crying. Among symptomatic patients, 71 presented with mild symptoms (68.26% PSS1), 31 moderate (29.8% PSS2) and 2 severe (1.92% PSS3). No lethal cases were observed. The drug categories that most often caused symptoms were antihistamines (15/43; 34.9%); neuropsychiatric/opioid drugs (12/34; 35.3%); antiasthmatics (10/24; 41.7%).
Conclusion: The ME were mainly due to parents' inexperience, especially when involving new parents, or when similar-named drugs, and large number of medicines were given to newborns and infants. Sometimes, prescriptions are difficult to interpret, as well as drug dosing indications. Moreover, leaflets may contain terms difficult to understand by non-native Italian speakers.

70. Non-ST-segment-elevation myocardial infarction after phenylephrine misdosing

Jason L Dorais, John Dayton, E Martin Caravati

Emergency Department, University of Utah, Salt Lake City, USA

Objective: To report a case of non-ST-segment-elevation myocardial infarction (NSTEMI).
Case report: A 68-year-old male with medical history of hypertension and deep venous thrombosis presented from the Post-Operative Care Unit (PACU) to the emergency department complaining of chest pain. During his nasal surgery, the patient inadvertently received 1000 µg of intravenous (IV) phenylephrine, as opposed to the intended dose of 100 µg. The dosing error was a result of inconsistent medication preparation. As a result, the patient's blood pressure quickly spiked to a blood pressure of 240/115. His heart rate briefly dropped to 40 beats per minute (bpm) and then accelerated to 120 bpm. During this case time, the cardiac monitor showed roughly 60 s of ST depression. The anesthesiologist quickly realized the error and controlled the patient's blood pressure with propofol. The patient's abnormal vital signs resolved in less than 10 min. The patient's first troponin was elevated to 2.1 µg/L (abnormally high above 0.03 µg/L). Two hours later, his troponin had increased slightly to 2.2 µg/L and his chest pain persisted. At this point, he was admitted to the cardiology service. Heparin was not used as the patient was experiencing post-operative epistaxis. Overnight, his troponin peaked at 2.54 µg/L, but by morning had decreased to 1.18 µg/L. A resting transthoracic echocardiogram showed no evidence of acute cardiac injury.
Conclusion: This case report describes a patient who experienced a non-ST-segment-elevation myocardial infarction (NSTEMI) secondary to extreme hypertension after an accidental overdose of phenylephrine. As many physicians work at multiple practice locations, we present this case in order to emphasize both the importance of consistent medication labeling and delivery practice. Also, as many patients use alpha agonist medications of varying delivery method and preparation, we emphasize the importance of taking a thorough medication history that includes over the counter preparations, daily medications, and recent surgical medications as the side effects caused by alpha agonists can be extreme and are not entirely dose-dependent.

71. Topiramate-associated heat stroke resulting in disseminated intravascular coagulation

Neal B Madhani[1], Andrew M King[2], Nathan B Menke[1], Andaleeb H Raja[1], Michael Abesamis[1], Anthony F Pizon[1]

[1]*Department of Emergency Medicine, University of Pittsburgh Medical Center, Pittsburgh, USA;* [2]*Department of Emergency Medicine, Wayne State University, Detroit, USA*

Objective: Describe a case of topiramate associated heat stroke resulting in disseminated intravascular coagulation.
Case report: A 38-year-old man was found unresponsive next to his lawn mower after mowing the lawn. The maximum ambient temperature that day was 28.9°C (84°F). He was transported to the emergency department and found to have the following vital signs: temperature 42.1°C (rectal), blood pressure 110/40 mmHg, pulse 160 beats/min, and oxygen saturation of 89% on room air. He had no signs of rigidity, hyperreflexia, or trauma. He was intubated and hyperthermia was managed with a cooling blanket and multiple liters of cooled saline intravenously. The patient's prescription medications included topiramate and carbamazepine and he had recently been started on risperidone. Over the next 24 h, the patient developed multi-organ dysfunction including disseminated intravascular coagulation, acute kidney injury, hepatic injury, and hypotension. This was further complicated by ischemic gastritis, upper gastrointestinal bleeding, and gastric perforation requiring complete gastrectomy. After a prolonged hospitalization, he was discharged to a nursing home. Cultures of blood, urine, cerebrospinal fluid (CSF), and stool were unrevealing. Electroencephalography demonstrated no evidence of seizure activity. A urine gas-chromatography/mass spectrometry (GC/MS) qualitative drug screen detected only topiramate. Computed tomography (CT) imaging of head, neck, chest, and abdomen were unremarkable. The patient's co-workers reported no alteration of his mental status on the day of his presentation to the hospital.