Letters to the Editor

Cashew nut shell liquid poisoning

Sir,

Termites are the major wood-destroying pests. Wood preservatives such as chlorinated products, boric acid, and arsenic compounds pose negative environmental threat. Termiticide from natural sources such as cashew nut shell liquid (CNSL) is less toxic. It is a reddish brown viscous liquid found in the pericarp of the cashew nut (Anacardium occidentale). We report here a case of self-ingestion of termiticide containing CNSL.

A 23-year-old woman was brought to our hospital with H/o intake of 500 ml of PILOT wood preservative (CNSL). On arrival, she was conscious, oriented, and hemodynamically stable. She had no complaints. Blood investigations were normal except for TLC - 29,000, elevated liver function tests (LFTs) (total bilirubin - 2.8, direct - 1.4, indirect - 1.4, SGOT - 172, SGPT - 104, and ALP - 119), and abnormal coagulation tests (INR - 2.02, PTT 38.5). Arterial blood gas (ABG) showed metabolic acidosis (pH - 7.25, PCO₂ - 21, PO₂ - 141, and HCO₃ - 10). She was given fresh frozen plasma, bicarbonate, proton pump inhibitors, steroids, and N-acetyl cysteine. After few hours, she complained of burning sensation in throat, epigastrium, and perianal region. The urine and stool had the smell of CNSL. She had linear hyperpigmented lesions in the breast and anterior abdominal wall which corresponded to spillage of CNSL during intake [Figure 1].

Natural CNSL contains mixture of various alkylated phenols. Anacardic acid (80.9%) is a major constituent followed by Cardol (10–15%) and small amounts of methyl derivatives of cardiol. It has phenolic fragrance. Anacardic acid is a derivative of salicylic acid.

Even though the compounds have phenolic structure, the clinical presentation of our patient was different from phenol poisoning. Symptoms of phenol poisoning develop rapidly and include nausea, vomiting, lethargy or coma, hypotension, tachycardia or bradycardia, dysrhythmias, seizures, acidosis, hemolysis, methemoglobinemia, and shock.

CNSL is slightly acidic (pH - 6.8). Our patient had symptoms of corrosive ingestion from day 1. In spite of consuming large amounts of CNSL, the symptoms resolved in few days.

Hyperpigmented skin lesions over the abdomen and breast were due to anacardic acid induced contact dermatitis. Anacardic acid is closely related to urushiol, which causes contact dermatitis. Perianal skin excoriation is due to ingested antigens that remain sufficiently intact within the feces to affect perianal skin.

The bilirubin levels and liver enzymes were mildly elevated from day 1. The toxic hepatitis resolved by day 3. Our patient also had elevated prothrombin and partial thromboplastin time on day 1. This could be due to the inhibitory action of anacardic acid on clotting factors.

Further studies are needed to know more about the clinical spectrum of CNSL poisoning.

Financial support and sponsorship
Nil.

Figure 1: Contact dermatitis (hyperpigmented skin lesions) due to cashew nut shell liquid spillage over abdomen
Conflicts of interest
There are no conflicts of interest.

Balaji Balasubramanian,
Khaja Mohideen Sherfudeen,
Senthil Kumar Kaliannan,
Karthikeyan Murugesan
Department of Anaesthesiology and Critical Care, Kauvery Hospital,
Trichy, Tamil Nadu, India

Correspondence:
Dr. Khaja Mohideen Sherfudeen,
Department of Anaesthesiology and Critical Care,
Kauvery Hospital, No 1, K.C Road, Tennur,
Trichy - 620 017, Tamil Nadu, India.
E-mail: khaja.sherfudeen@gmail.com

References
1. Asogwa EU, Mokwunye IU, Yahaya LE, Ajao AA. Evaluation of cashew nut shell liquid (CNSL) as a potential natural insecticide against termites (soldiers and workers castes). Res J Appl Sci 2007;2:939-42.
2. Tyman JH, Johnson RA, Muir M, Rohgar R. The extraction of natural cashew nut-shell liquid from the cashew nut (Anacardium occidentale). J Am Oil Chem Soc 1989;66:553-7.
3. Todorovic V. Acute phenol poisoning. Med Pregl 2003;56 Suppl 1:37-41.
4. Rosen T, Fordice DB. Cashew nut dermatitis. South Med J 1994;87:543-6.
5. Wang D, Girardi TJ, Kasten TP, LaChausse RM, Miller-Wideman MA, Darley RC. Inhibitory activity of unsaturated fatty acids and anacardic acids toward soluble tissue factor-factor VIIa complex. J Nat Prod 1998;61:1352-5.

This is an open access article distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as the author is credited and the new creations are licensed under the identical terms.

Access this article online
Quick Response Code:
Website:
www.ijccm.org
DOI: 10.4103/0972-5229.173696

How to cite this article: Balasubramanian B, Sherfudeen KM, Kaliannan SK, Murugesan K. Cashew nut shell liquid poisoning. Indian J Crit Care Med 2016;20:57-8.