

# Acute methanol poisoning

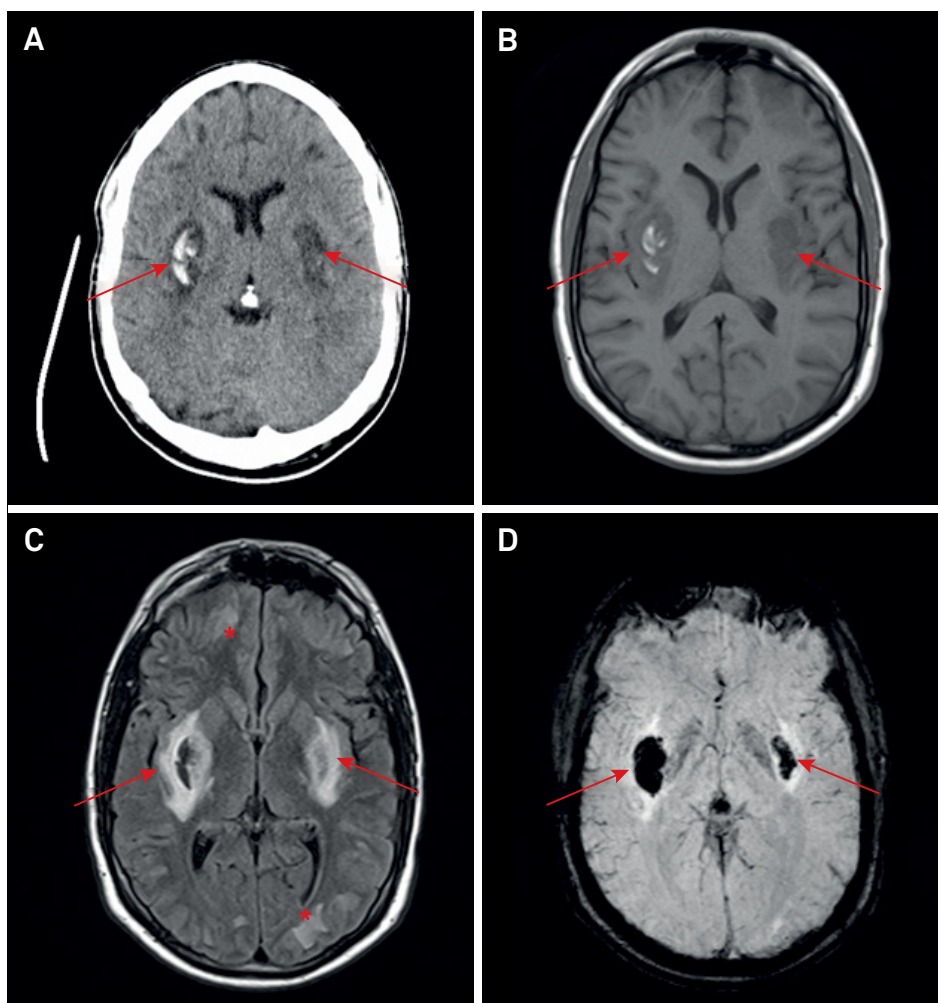
## Intoxicação aguda por metanol

Mauricio F. Villamar<sup>1</sup>

A 24-year-old man presented with acute encephalopathy, hematemesis, and rigidity of the extremities. He had anion gap metabolic acidosis. Osmolar gap was normal. Plasma methanol level was 40 mg/dL. The Figure shows his neuroimaging findings.

Treatment with fomepizole and hemodialysis improved his encephalopathy. No obvious visual deficits were noted. There was generalized hypertonia and hyperreflexia, and dystonia of the right arm.

Formic acid, an end product of methanol metabolism, contributes to metabolic acidosis following methanol poisoning. Formate inhibits mitochondrial cytochrome oxidase, causing histotoxic hypoxia that preferentially affects the retina, optic nerve, subcortical white matter, and lentiform nucleus. Survivors may develop ophthalmologic abnormalities, dystonia or parkinsonism<sup>1,2,3</sup>.



**Figure.** Hemorrhagic necrosis of bilateral lentiform nuclei (arrows) was present on head CT (Panel A) and on non-contrast brain MRI (Panel B, T1-weighted; Panel C, T2/FLAIR-weighted; Panel D, susceptibility-weighted imaging). Subcortical white matter hyperintensities were also noted (Panel C, asterisks).

<sup>1</sup>University of Kentucky, Department of Neurology, Lexington KY, USA.

**Correspondence:** Mauricio F. Villamar; Department of Neurology, University of Kentucky; 740 South Limestone St.; Kentucky Clinic – J464; Lexington, KY, United States 40536-0284. E-mail: mvillamar@uky.edu

**Conflict of interest:** There is no conflict of interest to declare.

Received 30 March 2018; Accepted 15 April 2018.

## References

---

1. Barceloux DG, Bond GR, Krenzelok EP, Cooper H, Vale JA. American Academy of Clinical Toxicology practice guidelines on the treatment of methanol poisoning. *J Toxicol Clin Toxicol* 2002;40(4):415-46. <https://doi.org/10.1081/CLT-120006745>
2. Giudicissi Filho M, Holanda CV, Nader NA, Gomes SR, Bertolucci PH. Bilateral putaminal hemorrhage related to methanol poisoning: a complication of hemodialysis? Case report. *Arq Neuropsiquiatr* 1995;53(3A):485-7. <https://doi.org/10.1590/S0004-282X1995000300020>
3. Kraut JA, Mullins ME. Toxic alcohols. *N Engl J Med*. 2018 Jan;378:270-80. <https://doi.org/10.1056/NEJMra1615295>