

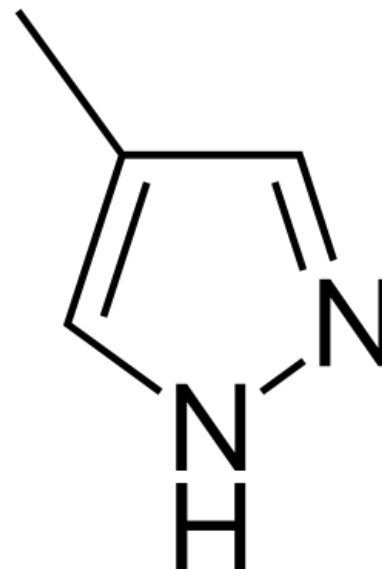
# Fomepizole

This article has been translated from WikiSkripta; ready for the **editor's review**.

**Fomepizole** (4-methylpyrazole) is an antidote to methanol or ethylen glycol poisoning. It is a **specific inhibitor of alcoholdehydrogenase**. It blocks the transformation of methanol to formaldehyde, which is toxic and would further transform to formic acid. Formic acid damages the retina, optic nerve and basal ganglia, where it accumulates. Fomepizole is currently not registered in the Czech republic and ordinarily available. Ethanol can be used as a variant for the antidote therapy, because it competes with methanol for an enzyme. That leads to decrease of methanol fraction, which would otherwise be transformed into toxic metabolites.

## Characteristics

The advantage of fomepizol is that it is **not necessary to monitor the level** as it has to be done with ethanol, there is **no risk of hypoglycemia** and when administered timely, it decreases the need of hemodialysis and it doesn't decrease the activity of the central nervous system. Fomepizol is being metabolized by system CYP 450 in the liver, its metabolites are excreted in the urine. It is possible to eliminate Fomepizol with dialysis, it also induces its own metabolism, therefore it is not necessary to monitor its blood level. An integral part of the poisoning with methanol or ethylen glycol is administration of folic acid, which accelerates the oxygenation of formic acid and it blocks the accumulation of formic acid in the tissues.



Fomepizole

## Dosage<sup>[1]</sup>

Fomepizol is administered in infusions diluted by 100 ml 5% glucose or saline solution. Dose – initial 15 mg/kg (max. 1 g), then a maximum of 4 bolus doses, one every 12 hours, then maintenance dose 15 mg/kg, again one every 12 hours. The highest effect is 90-120 minutes after administration of the antidote.

## Indicated patients

The administration of fomepizol should be preferred<sup>[1]</sup>:

- in patients, which can't get ethanol:
  - pregnant women in the first trimester (teratogenic effect of ethanol);
  - children - there is a risk of developing hypoglycemia or even hypoglycemic coma after administration of ethanol
- in patients with consciousness disorder;
- in patients with a liver disease
- in patients using opioids, sedatives, antidepressants, anticonvulsives, hypnotics, antihistamines, disulfiram or metronidazole

## Links

### Related articles

- Intoxikace alkoholu (czech wikiskripta)
- Methanol poisoning

### Reference

1. Toxicologic Information Centre. *Methylalkohol* [online]. ©2012. The last revision 2012, [cit. 2012-09-13]. <<http://www.tis-cz.cz/informace-pro-odborniky/methylalkohol>>.