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Table 2

Laboratory Testing for Toxic Alcohol Ingestion

Laboratory Test or Calculated Parameter	Methodology	Clinical Value	Limitations
osmolal gap	calculated parameter	▶ high sensitivity for detecting toxic alcohol ingestions	▶ low specificity, especially for gaps <30 ▶ need to consider other causes of elevated gap
anion gap	calculated parameter	▶ easily calculated using common chemistry tests	▶ anion gap is late sign of ingestion ▶ sensitivity and specificity not well-defined for toxic alcohol ingestions
arterial blood gas	blood gas analyzer	▶ detect acidosis caused by ethylene glycol or methanol	acidosis is late sign of ingestion
ethylene glycol	GC or GC/MS	▶ gold standard for ethylene glycol detection/quantitation ▶ helps in determining when to stop antidote therapy or dialysis	▶ labor-intensive methodology ▶ not automatable.
ethylene glycol	enzymatic assay	▶ rapid determination of ethylene glycol on automated chemistry analyzer	▶ limited clinical experience ▶ requires user-defined parameters
glycolic acid	GC	▶ prognostic factor for ethylene glycol	▶ labor-intensive methodology ▶ not commonly performed even in labs with GC
isopropanol, methanol	GC	▶ gold standard method for isopropanol and methanol detection/quantitation ▶ can also detect acetone (metabolite of isopropanol) ▶ helps in determining when to stop antidote therapy or dialysis	▶ labor-intensive methodology ▶ not automatable
oxalate crystals, urine	urine microscopy	▶ seen in ethylene glycol ingestion	▶ unsuitable as screening test due to poor specificity and sensitivity ▶ late sign of ingestion