

PEth Testing and Liver Transplant Evaluations

A case report

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The case

34 yo man seen on hospital day 4 for evaluation/treatment of decompensated cirrhosis; required transfer to higher level of care given severity of illness; some encephalopathy present

- MELD on admission 38, Creatinine 1.94

Reported history of single lapse in alcohol use with single glass of wine more than 5 weeks prior to admission; history confirmed by family

Consistent history through multiple providers

As part of evaluation for liver transplant PEth ordered

- Resulted on hospital day 10
 - PEth 16.0/18/1: 1608 ng/ml



History

Alcohol: Abstinence reported for ~8 months with single lapse; prior diagnosis of severe alcohol use disorder

Confounders reported by patient and supported by family

- Kombucha (home brewed and store bought)
- Mouthwash containing ethanol
- Cooking wine containing ethanol / white wine in sauces
- Medications in ICU (none reported to contain ethanol but unclear of possible diluent interference)
- Hand Sanitizer used liberally by staff, visitors, patient

Lab Collection / Transport (report by reference lab denied any suspected laboratory issues)



Laboratory Testing

PEth

- Hospital day 4: 1608 ng/ml
 - Unexpectedly high given timeline from patient and team's clinical experience
 - >200 ng/ml is consistent with chronic or heavy alcohol use
 - Window of detection 2-4 weeks typically
 - Rare mention in literature of levels >1000 ng/ml
 - Unclear if critical illness, renal injury play part in prolonged metabolism / interference

- Hospital day 10: 636 ng/ml

Urine Drug Screen (-)

Blood Ethanol (-) on admission

MCV 101.1



Hospital Course and Follow Up

Liver transplant on hospital day 20

Discharged on hospital day 47

Readmission 1 month later with concern for rejection

- Historical inconsistencies, familial concern for return to drinking
- PEth 512 ng/ml upon readmission
- After multiple discussions agreed there was a return to drinking and alcohol use prior to initial admission

