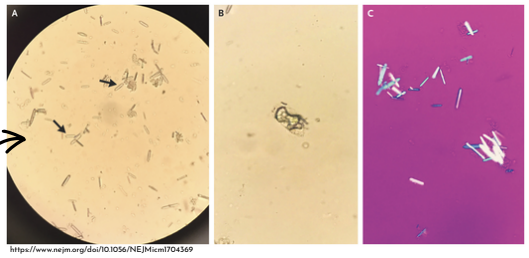
High Anion Gap Metabolic Acidosis (HAGMA)

MUDPILES		
M	**Methanol Ingestion**	Acute visual loss, optic disc hyperemia*, CNS depression, coma
U	**Uremia**	Constitutional sx (fatigue, weakness, HA) GI sx (ammonia breath, N/V) Derm sx (uremic frost*) Uremic pericarditis or pleuritis Neuro sx (asterixis*)
D	**Diabetic Ketoacidosis (DKA)**	Hyperglycemia, polyuria, polydipsia, Kussmaul Respirations*
P	**Propylene Glycol Ingestion**	found in anti-freeze CNS depression, multi-system failure
I	**Iron OD, Isoniazid OD**	Iron: GI upset (early), bowel obstruction (late) Isoniazid: seizures --> lactic acidosis*
L	**Lactic Acidosis**	End product of anaerobic glycolysis
E	**Ethylene Glycol Ingestion**	Renal symptoms (calcium-oxalate kidney stones)*
S	**Salicylate Toxicity**	Early: respiratory alkalosis Late: HAGMA --> mild: tinnitus*, N/V, moderate: tachypnea, diaphoresis, severe: renal failure, seizures, coma

click here for example

click here for example



* indicates high-yield buzzwords

Henderson-Hasselbach Equation

$$pH = 6.1 + \log_{10}\left(\frac{[HCO_3^-]}{0.03 \times pCO_2}\right)$$

Anion Gap Equation

$$Na^+ - (Cl^- + HCO_3^-)$$