**EM Basic- Aspirin (ASA) Overdose**

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**Background**

Aspirin aka acetylsalicylic acid🡪hydrolyzed to salicylate in intestinal wall, liver, and RBCs

Other preparations containing salicylate – salicylic acid (acne and warts), bismuth subsalicylate (Pepto-Bismol-antidiarrheal), methyl salicylate (oil of wintergreen-cream for MSK pain)

**History**

Ask for ALL poisonings:

 What did you take?

Dosage – dose per tablet and how many tablets?

Time?

 Suicide attempt?

Single ingestion or repeated ones?

 Any coingestants?

Any comorbid conditions?

**Associated signs and symptoms**

Nausea/vomiting, tinnitus, hearing loss, AMS, SOB, hyperpnea, diaphoresis

**Medical history/Medications**

Any conditions requiring chronic aspirin use?

**Exam**

**General** – A & O x 3? Confused? Agitated? Restless?

**Vital Signs** – Tachypnea, hyperthermia, hypotension, or tachycardia?

**Lungs** – Hyperpnea? Crackles or signs of pulmonary edema?

**GU** – oliguria?

**Labs**

**Serum salicylate level** (10-30 mg/dL = therapeutic; >40 = toxicity)

**BMP** (anion gap, kidney function, hypoglycemia, hypokalemia)

**ABG** (most patients have primary respiratory alkalosis and primary metabolic acidosis)

**EKG** (occult ingestion-TCAs cause widening of QRS, QTc prolongation, tall R wave in aVR)

**Serum acetaminophen level** (occult ingestion- common coingestion in suicide, part of combo preparations with ASA such as Excedrin)

**PEARL** – an EKG and serum acetaminophen level should be ordered in ALL intentional poisonings to r/o occult ingestions

**Imaging**

**CT Head** – if patient has AMS not clearly d/t a non-cerebral cause such as hypoglycemia

**CXR** – if patient c/o SOB or there are any + findings on lung exam

**Management**

**ABCs**

O2 as necessary

Replace insensible fluids losses: NS at 10-15 ml/kg/hr first 2-3 hrs, then titrate to urine output of 1-2 ml/kg/hr

**PEARL** –only intubate if pt has rising CO2 (intubation can worsen acidosis and cause ↑ CNS toxicity)

**Activated Charcoal (AC)** – 1 g/kg up to 50 g PO (only in acute cases)

**Dextrose** – add 50-100 g dextrose to each liter of maintenance fluid

**PEARL** – dextrose given regardless of serum glucose concentration bc pt can still have decreased cerebral glucose (neuroglycopenia)

**Bicarbonate** - 1-2 mEq/kg IV bolus, then infusion of 100-150 mEq in 1 L sterile water with 5% dextrose; titrate until pH is 7.5-8

**Potassium** – bicarb ↓ K+ level, so add K+ to fluids if in low normal range

**PEARL** – an alkalyotic pH is NOT a contraindication to bicarb therapy

**Hemodialysis**

Indications

 Serum salicylate level > 100 mg/dL in acute; > 50 in chronic

 Endotracheal intubation other than for coingestants

 Oliguric renal failure

 Pulmonary or cerebral edema

AMS

Clinical deterioration despite appropriate supportive care

**Patient Monitoring**

 Continuous respiratory and cardiac monitoring

 Serial serum salicylate levels q 1-2 hours until these criteria met:

 Decrease from peak measurement

 Most recent measurement < 40 mg/dL

 Pt asymptomatic with normal rate and depth of breathing

Serial BMPs, ABGs, and urine pH levels q 1-2 hours

**PEARL:** Do not stop monitoring ASA levels until they are downtrending. Classic mistake is to admit patient to a psych floor with one “therapeutic” ASA level when it is still rising.

**Disposition**

**Acute intoxication** – admit for pulmonary edema, CNS symptoms other than tinnitus, acidosis and electrolyte disorders, dehydration, renal failure, or increasing serum salicylate levels

**Chronic intoxication** – high mortality rate, most admitted

**Infant intoxication** – all admitted

(Contact: steve@embasic.org)