Aspirin Poisoning: Quick Treatment Tips

Aspirin can be deadly in overdose! Health care providers are encouraged to attend to aspirin poisoning cases with the same diligence afforded to cases of sepsis or other life-threatening diseases. Aspirin poisoning is best cared for by clinicians with appropriate knowledge and experience in treating critical drug poisoning.

Principles of Medical Management of Aspirin Poisoning

- After overdose, aspirin may be absorbed from the gut into the bloodstream over a prolonged period of time. Monitor serial serum drug levels, and carefully consider the potential benefit of activated charcoal administration or whole bowel irrigation.
- Aspirin poisoning often leads to dehydration: administer intravenous fluids as necessary to restore and maintain intravascular volume.
- Aspirin may lead to hypoglycemia and/or low CNS glucose availability: monitor blood glucose concentrations and administer dextrose as warranted.
- Aspirin crosses the blood-brain barrier in acidic blood. Administer IV sodium bicarbonate to achieve a blood pH between 7.45-7.5. [Many physicians will use D5W with 150 mEq HCO3/L as an initial crystalloid infusion]
- Aspirin poisoning causes hyperventilation which helps to maintain alkalemia. Beware! Giving sedatives may lead to hypoventilation and worsen aspirin poisoning.
- Paralysis and endotracheal intubation may be a lethal procedure! A rise in PaCO2 (and a resultant decline in serum pH) from paralysis or hypoventilation may lead to an increase in aspirin entry to the brain, and positive-pressure ventilation may reduce cardiac filling. If mechanical ventilation becomes necessary it is important that hyperventilation and cerebral perfusion be expertly maintained.
- In addition to alkalinizing the bloodstream, sodium bicarbonate helps to alkalinize the urine and promote aspirin elimination by the kidney. Monitor urine pH carefully and try to achieve urine pH 7-8. Hypokalemia will inhibit the ability to alkalinize urine; potassium supplementation is typically necessary.
- Hemodialysis can remove aspirin from the bloodstream and correct fluid, electrolyte, and pH balance. It can be life-saving!

Indications for Dialysis (Partial Listing)
- Worsening confusion, somnolence, or agitation suggesting CNS toxicity
- Seizures (preferably, 30 minutes before seizures occur)
- Pulmonary edema or heart failure complicating IV bicarbonate therapy
- Inability to adequately correct acid-base or electrolyte abnormalities
- Consider strongly if serum salicylate concentration is > 100 mg/dL (acute ingestion) or > 60 mg/dL (acute-on-chronic or chronic ingestion), or if serum salicylate level is rising dangerously fast

Notes on Performing Dialysis
- The dialysate can be buffered to a pH between 7.45 and 7.5 to maintain alkalemia.
- The dialysis run-time may be more than 3-4 hours; use serial serum salicylate concentrations to determine when dialysis has been sufficiently effective.

This information has been downloaded from The Poison Control Center at The Children’s Hospital of Philadelphia’s website and anyone using this information is subject to the Terms of Use on that website including Additional Terms of Use for Medical Information.