

SALICYLATE TOXICITY AND EARLY HEMODIALYSIS

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Early hemodialysis is an important intervention in clinically significant salicylate toxicity. In our case, early hemodialysis was performed in the care of a 47 y/o female presenting 12 hours after ingesting 65,000mg of aspirin with a salicylate level of 92 mg/dl. The arterial blood gas showed respiratory alkalosis with concomitant anion gap metabolic acidosis. She was started on a bicarbonate drip and underwent hemodialysis twice for a total of 8 hours until the salicylate was less than 40 mg/dl. Her clinical course was complicated by oliguric renal failure that improved after dialysis.

Salicylate intoxication in adults usually causes a respiratory alkalosis, mixed metabolic-respiratory alkalosis or a pure anion gap metabolic acidosis. The CNS is the most vulnerable organ and its involvement can lead to cerebral edema and death and thus, prompt diagnosis and early aggressive treatment is crucial. Administration of hypertonic sodium bicarbonate has been widely used as first line treatment. Initially considered as a means of alkalinizing the patient's urine to trap ionized salicylate in the renal tubules and promote its excretion.

Recent data has shown that patients have died with only mild elevations of serum salicylate levels, and that most of deaths happened on patients who did not receive dialysis in an appropriate time frame. Findings that should prompt consideration of hemodialysis include: Serum concentrations >100 mg/dl even without clinical findings, or serum concentration in or above the therapeutic range (>40mg/dl) if associated with CNS dysfunction with no other explanation, renal failure, pulmonary edema or hypoxia, severe hyperventilation ($\text{PCO}_2 < 25 \text{ mm/hg}$) or severe acid-base imbalance with no other explanation. This case shows the importance of early diagnosis and intervention with hemodialysis in salicylate toxicity in decreasing morbidity.