



32. SODIUM BICARBONATE

a) Pharmacology

Sodium bicarbonate corrects acidosis.

b) Pharmacokinetics

- (1) Rapid onset of action in the blood
- (2) Delayed onset of action in the tissues

c) Indications

- (1) Used in cardiac arrest only after more definitive treatments
- (2) Hyperkalemia
- (3) Tricyclic and phenobarbital overdose
- (4) Pretreatment for patients with decreased renal function who will be receiving IV contrast dye

d) Contraindications

Preexisting alkalosis

e) Adverse Effects

- (1) Worsened intracellular acidosis due to carbon dioxide formation
- (2) Hyperosmolality
- (3) May precipitate congestive heart failure
- (4) Metabolic alkalosis
- (5) Acute hypokalemia
- (6) Exacerbation of central venous acidosis
- (7) Shifting the oxyhemoglobin dissociation curve, inhibiting the release of oxygen to the tissues

f) Precautions

- (1) Inactivates simultaneously-administered catecholamines
- (2) Priorities before use:
 - (a) Intubation
 - (b) Hyperventilation
 - (c) Defibrillation
 - (d) Epinephrine
 - (e) Antiarrhythmics

g) Dosage

- (1) Should only be given after airway has been secured and ventilations achieved
- (2) Adult: Administer 1 mEq/kg IVP bolus initially with 0.5 mEq/kg at 10-minute intervals.
- (3) Pediatric: Administer 1 mEq/kg IVP/IO; for patients less than 1 year of age, must be diluted (1:1) with LR.



(4) Hyperkalemia

(Reserve for patients with suspected CRUSH SYNDROME or patients with functional kidneys by history.)



FLUSH IV WITH 5 ML OF LR BETWEEN CALCIUM AND BICARBONATE ADMINISTRATION.

(a) Adult:



Consider sodium bicarbonate 50 mEq SLOW over 5 minutes and then initiate drip of sodium bicarbonate 100 mEq in 1,000 mL LR to run over 30–60 minutes.

(b) Pediatric:



Consider sodium bicarbonate 1 mEq/kg IV over 5 minutes. For patients less than 1 year of age, must be diluted 1:1 with LR.

(5) IV drip for diuresis prior to receiving IV contrast dye:

Continue the sodium bicarbonate drip at the rate ordered by the sending physician. Document the base solution and the amount of sodium bicarbonate that was added to the solution and the total volume infused.

Do not administer IVP medications through the same IV line as the bicarbonate drip unless compatibility has been established. Flush the line well before and after giving any IVP medication.