

Southern Illinois Regional EMS System

JJ-26 SODIUM BICARBONATE

1. Class:
 - 1.1. Buffer, alkalinizing agent, electrolyte supplement.
2. Description:
 - 2.1. Sodium bicarbonate reacts with hydrogen ions to form water and carbon dioxide and thereby can act to buffer metabolic acidosis. As the plasma hydrogen ion concentration decreases, blood pH rises.
3. Onset and Duration:
 - 3.1. Onset: 2-10 minutes.
 - 3.2. Duration: 30-60 minutes.
4. Indications:
 - 4.1. Tricyclic antidepressant overdose.
 - 4.2. Known preexisting bicarbonate responsive acidosis.
 - 4.3. Intubated patient with continued long arrest interval, pulseless electrical activity.
 - 4.4. Upon return of spontaneous circulation after long arrest interval.
 - 4.5. Alkalinization for treatment of specific intoxications/rhabdomyolysis.
 - 4.6. Management of metabolic acidosis.
 - 4.7. Diabetic Ketoacidosis.
5. Contraindications:
 - 5.1. In patients with chlorine loss from vomiting and gastrointestinal suction.
 - 5.2. Metabolic and respiratory alkalosis.
 - 5.3. Severe pulmonary edema.
 - 5.4. Abdominal pain of unknown origin.
 - 5.5. Hypocalcemia.
 - 5.6. Hypokalemia.
 - 5.7. Hypernatremia.
 - 5.8. When administration of sodium could be detrimental.
6. Adverse Reactions:
 - 6.1. Metabolic alkalosis.
 - 6.2. Hypoxia.
 - 6.3. Rise in intracellular P_{CO_2} and increased tissue acidosis.
 - 6.4. Electrolyte imbalance (Hypernatremia).
 - 6.5. Seizure.
 - 6.6. Tissue sloughing at injection site.
7. Drug Interaction:
 - 7.1. Sodium bicarbonate may precipitate in calcium solutions.
 - 7.2. Alkalinization of urine may shorten elimination half-lives of certain medications.
 - 7.3. Vasopressors may be deactivated.
8. How Supplied:
 - 8.1. 50mEq in 50ml, and 0.5, 0.6mEq/ml.

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(continued)

9. Dosage and Administration:
 - 9.1. Urgent Forms of Metabolic Acidosis:
 - 9.1.1. Adult:
 - 9.1.1.1. 1mEq/kg IV:
 - 9.1.1.1.1. Repeat with 0.5mEq/kg every 10 minutes.
 - 9.1.2. Pediatric:
 - 9.1.2.1. Same as adult:
 - 9.1.2.1.1. Infuse slowly and only if ventilations are adequate.
10. Special Considerations:
 - 10.1. Pregnancy Category C.
 - 10.2. When possible, blood gas analysis should guide bicarbonate administration.
 - 10.3. Bicarbonate administration may increase edematous or sodium retaining states.
 - 10.4. Sodium bicarbonate may worsen congestive heart failure.
 - 10.5. Maintain adequate ventilation (gas exchange).