05-0818 - Pediatric Hyperglycemia

Authority

Health and Safety Code Division 2.5, California Code of Regulations, Title 22, Division 9

Definition

Elevated blood glucose levels (Hyperglycemia) can be a medical emergency and potentially life threatening. High glucose levels in Type 1 diabetics can cause diabetic ketoacidosis (DKA). Diabetic ketoacidosis is characterized by thirst and increased urination, drowsiness, confusion, dehydration, nausea, vomiting and missed medication doses. This is not true for Type II Diabetics, who can't get DKA.

These patients may have a fruity odor on breath, deep and rapid respirations (Kussmaul Respirations). This medical condition is associated with possible infections and patients with hyperglycemia should be screened for potential sepsis (see pediatric sepsis protocol).

Treatment - BLS

1. **OXYGEN**: as appropriate, goal to maintain SpO2 between 92% and 94%, Assist ventilations as necessary.
2. **VITALS**: assess vitals
3. **BLOOD SUGAR CHECK**: test blood sugar

Treatment - ALS

1. **MONITOR**: treat rhythm as appropriate
2. **BLOOD SUGAR CHECK**: test blood sugar
3. **CAPNOGRAPHY**: utilize waveform capnography, ETCO2 readings of 25 mmHg or less is suggestive of acidosis (DKA). If the blood sugar is equal to or great than 250 mg/dl, then fluid resuscitate.
4. **IV ACCESS**: hypotension, if patient has a systolic BP less than 70 mm Hg or (70 + (2 x age in years)). Administer 20 ml/kg up to 250 ml fluid boluses until systolic BP is greater than 70 mm Hg or (70 + (2 X age in years)). Reassess patient after each bolus for signs of fluid overload (severe pedal edema, rales, etc.).
   a. Be gentle with large amounts of fluids due to the risk of cerebral edema in this patient population (decreasing level of consciousness) and potential brain herniation.
   b. Fluid resuscitate should not be greater than 30 ml/kg.
5. **DKA**: If blood sugar is greater than 250 mg/dl, and the patient has an ETCO2 reading less than or equal to 25 mmHg, AND the patient shows no signs of fluid overload, administer 20 ml/kg initially and then 10 ml/kg in 250 ml boluses, reassessing patient for signs of fluid overload after 250 ml infused.

Refer to a standard-length based assessment tape for drug doses and proper equipment sizes.