

	M30 - HYPERKALEMIA THERAPY	
	Version date: 2026-04-07	Effective date: 2026-04-14 (07:00)
ERS HIGH RISK MEDICATIONS (A03)		

INDICATIONS
<ul style="list-style-type: none"> Hyperkalemia that is known by measurement or suspected, based on the presence of symptoms and / or electrocardiographic (ECG) abnormalities, in a patient with end-stage renal disease (ESRD) or advanced stage chronic kidney disease (CKD) Any dialysis-dependent patient who has missed at least one or more dialysis treatments <u>irrespective of symptoms and / or ECG abnormalities</u> Overdose with potassium containing medications

WARNINGS
ABSOLUTE CONTRAINDICATIONS: <ul style="list-style-type: none"> Uncorrected hypoglycemia (insulin) ¹ Hypersensitivity to salbutamol
USE WITH CAUTION: <ul style="list-style-type: none"> Digoxin toxicity (calcium) ²

TABLE A: CARDIAC ARREST		
CALCIUM CHLORIDE (10%)	INTRAVENOUS (INTRAOSSEOUS)	ICP / ACP
ALL AGES: <ul style="list-style-type: none"> Administer 10 to 20 mg/kg (0.1 to 0.2 ml/kg) by rapid push & follow with saline flush (maximum per dose = 2 grams) Repeat once if the arrest persists 		
SODIUM BICARBONATE ³	INTRAVENOUS (INTRAOSSEOUS)	ICP / ACP
NOTE: USE THE 4.2% CONCENTRATION IN INFANTS & CHILDREN		
ADULTS / ADOLESCENTS (8.4%): <ul style="list-style-type: none"> Administer 1 to 2 mEq/kg (1 to 2 ml/kg) by rapid push & follow with saline flush (maximum per dose = 100 mEq) Repeat once if arrest persists 		
INFANTS / CHILDREN (4.2%): <ul style="list-style-type: none"> Administer 1 to 2 mEq/kg (2 to 4 ml/kg) by rapid push & follow with saline flush (maximum per dose = 50 mEq) Repeat once if the arrest persists 		

TABLE B: RETURN OF SPONTANEOUS CIRCULATION		
CALCIUM CHLORIDE (10%)	INTRAVENOUS (INTRAOSSEOUS)	ICP / ACP
<p>ALL AGES:</p> <ul style="list-style-type: none"> • If not given during arrest administer 10 to 20 mg/kg (0.1 to 0.2 ml/kg) by slow push over 1 to 2 minutes (maximum per dose = 2 grams) • Repeat as required if symptoms or ECG abnormalities persist or recur • If the time to medical care will be delayed, consider empirically repeating every 60 minutes 		
SODIUM BICARBONATE ³	INTRAVENOUS (INTRAOSSEOUS)	ICP / ACP
<p>NOTE: USE THE 4.2% CONCENTRATION IN INFANTS & CHILDREN</p> <p>ADULTS / ADOLESCENTS (8.4%):</p> <ul style="list-style-type: none"> • If not given during arrest, administer 1 to 2 mEq/kg (1 to 2 ml/kg) by slow push over 1 to 2 minutes (maximum per dose = 100 mEq) • Repeat as required if symptoms or ECG abnormalities persist or recur • If the time to medical care will be delayed, consider empirically repeating every 60 minutes <p>INFANTS / CHILDREN (4.2%):</p> <ul style="list-style-type: none"> • If not given during arrest, administer 1 to 2 mEq/kg (2 to 4 ml/kg) by slow push over 1 to 2 minutes (maximum per dose = 50 mEq) • Repeat as required if symptoms or ECG abnormalities persist or recur • If the time to medical care will be delayed, consider empirically repeating every 60 minutes 		
INSULIN & DEXTROSE	INTRAVENOUS (INTRAOSSEOUS)	ACP
<p>ADULTS / ADOLESCENTS:</p> <ul style="list-style-type: none"> • Administer 10 units of rapid acting insulin by slow push over 1 to 2 minutes with 50 ml (25 gm) of 50% dextrose • If the time to medical care will be delayed, consider empirically repeating every 4 hours • Monitor the BG hourly ¹ <p>INFANTS / CHILDREN:</p> <ul style="list-style-type: none"> • Administer 0.1 units/kg (max per dose = 10 units) of rapid acting insulin by slow push over 1 to 2 minutes & 5 ml/kg of <u>10% dextrose</u> • If the time to medical care will be delayed, consider empirically repeating every 4 hours • Monitor the BG hourly ¹ 		

TABLE C: NONARREST		
SALBUTAMOL ⁴	NEBULIZER	PCP / ICP / ACP
<p>ALL AGES:</p> <ul style="list-style-type: none"> Administer 10 mg over 10 minutes Repeat every 15 minutes as required if symptoms or ECG abnormalities persist or recur 		
SALBUTAMOL ⁴	METERED-DOSE INHALER (MDI) ⁵	PCP / ICP / ACP
<p>ALL AGES:</p> <ul style="list-style-type: none"> Administer 16 inhalations (1600 mcg) as one dose every 30 seconds Repeat one dose every 15 minutes as required if symptoms or ECG abnormalities persist or recur 		
CALCIUM CHLORIDE (10%)	INTRAVENOUS (INTRAOSSEOUS)	ICP / ACP
<p>ALL AGES:</p> <ul style="list-style-type: none"> Administer 10 to 20 mg/kg (0.1 to 0.2 ml/kg) by slow push over 1 to 2 minutes (maximum per dose = 1 gram) Repeat as required if symptoms or ECG abnormalities persist or recur If the time to medical care will be delayed, consider repeating every 60 minutes 		
SODIUM BICARBONATE ³	INTRAVENOUS (INTRAOSSEOUS)	ICP / ACP
<p>NOTE: USE THE 4.2% CONCENTRATION IN INFANTS & CHILDREN</p> <p>ADULTS / ADOLESCENTS (8.4%):</p> <ul style="list-style-type: none"> Administer 1 to 2 mEq/kg (1 to 2 ml/kg) by slow push over 1 to 2 minutes (maximum per dose = 100 mEq) Repeat as required if symptoms or ECG abnormalities persist or recur If the time to medical care will be delayed, consider empirically repeating every 60 minutes <p>INFANTS / CHILDREN (4.2%):</p> <ul style="list-style-type: none"> Administer 1 to 2 mEq/kg (2 to 4 ml/kg) by slow push over 1 to 2 minutes (maximum per dose = 50 mEq) Repeat as required if symptoms or ECG abnormalities persist or recur If the time to medical care will be delayed, consider empirically repeating every 60 minutes 		
INSULIN & DEXTROSE ⁵	INTRAVENOUS (INTRAOSSEOUS)	ACP
<p>ADULTS / ADOLESCENTS:</p> <ul style="list-style-type: none"> Administer 10 units of rapid acting insulin by slow push over 1 to 2 minutes with 50 ml (25 gm) of 50% dextrose If the time to medical care will be delayed, consider empirically repeating every 4 hours Monitor the BG hourly ¹ <p>INFANTS / CHILDREN:</p> <ul style="list-style-type: none"> Administer 0.1 units/kg (max per dose = 10 units) of rapid acting insulin by slow push over 1 to 2 minutes & 5 ml/kg of 10% dextrose If the time to medical care will be delayed, consider empirically repeating every 4 hours Monitor the BG hourly ¹ 		

NOTES

1. Low blood glucose (BG) must be corrected before insulin administration. BG must be monitored hourly after insulin administration.
2. Evidence supporting the safety of calcium administration for hyperkalemia due to acute digoxin toxicity is limited.
3. Do not use sodium bicarbonate as monotherapy. It has limited effect on serum potassium, but *may* be effective in the presence of metabolic acidosis.

Sodium bicarbonate is not compatible with calcium chloride. Flush intravenous tubing well between administration of calcium and bicarbonate).
4. Salbutamol has only a minor effect on serum potassium, but may be useful if other medications are out of scope or as a temporizing measure until vascular access is established.

Administration by MDI instead of nebulizer is not well studied. Sixteen inhalations (1600 mg) *may* be roughly equivalent to 10 mg by nebulizer.

When salbutamol is not available, Combivent may be substituted on a one-to-one basis.
5. Dextrose should never be administered alone as its effects on insulin release are variable. Insulin can be given alone when the BG is greater than 15 to 20 mmol/l, but it must be monitored closely.

LINKS / REFERENCES

- A03 - High Alert Medications
- C02.1 - Advanced Cardiac Arrest (Adult)
- C02.1 - Advanced Cardiac Arrest (Pediatric)
- E11 - Hyperkalemia

APPROVED BY



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VERSION CHANGES (refer to X08 for change tracking)

- Correction of salbutamol MDI (“16 inhalations as one dose”)