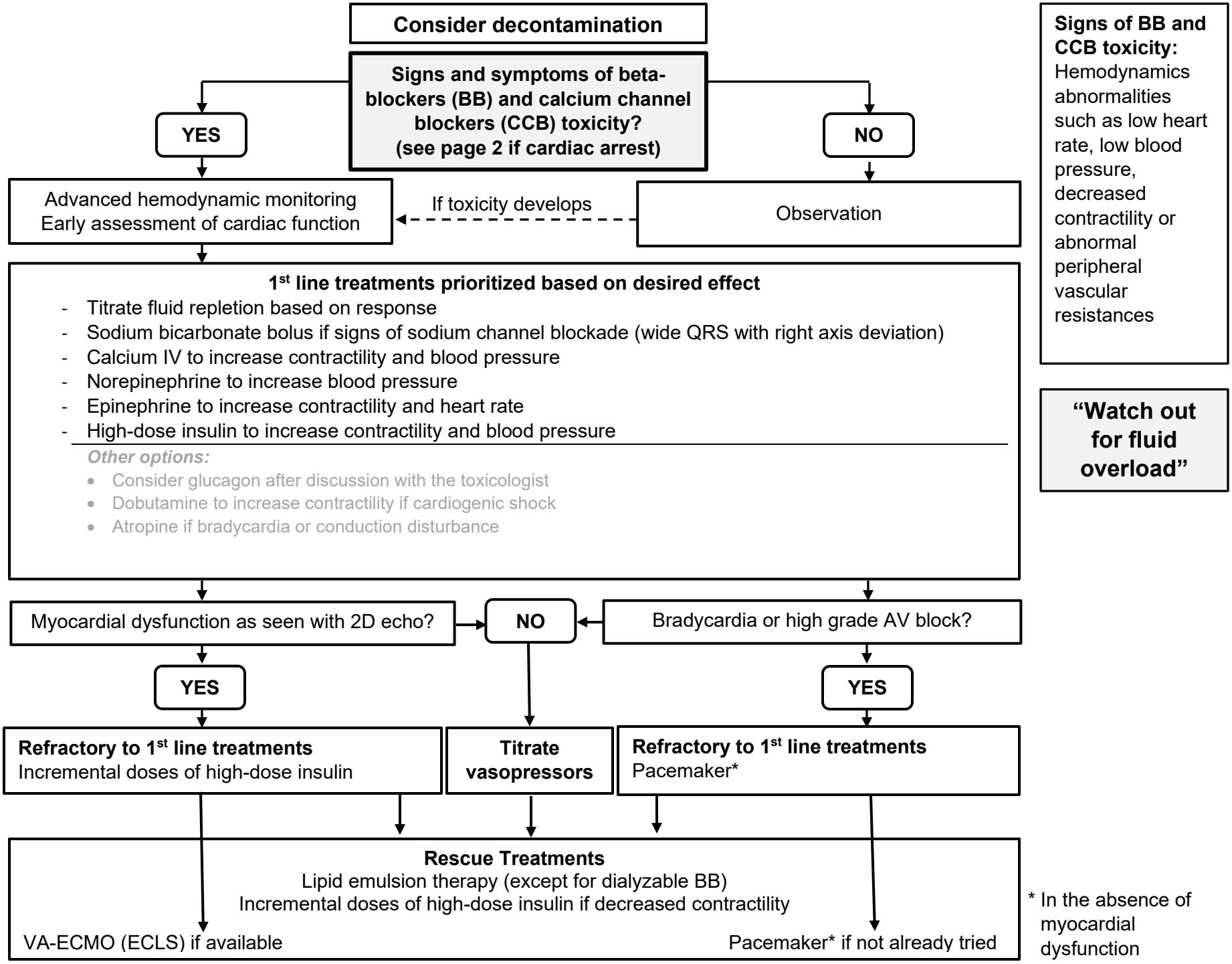

Dialyzable beta-blockers: Sotalol, Atenolol

Moderately dialyzable beta-blockers: Acebutolol, bisoprolol (to discuss with the toxicologist)

Dialyzable beta-blockers with limited clinical date: Nadolol (to discuss with the toxicologist)

Réf : 1) Bailey et al. *Guide des antidotes en toxicologie d'urgence*, 4e édition, 2013; 2) DeWitt et al. *Toxicol. Rev*, 2004; 23(4) : 230;
3) St-Onge et al. *Experts Consensus Recommendations For the Management Of Calcium Channel Blocker Poisoning In Adults*. Critical care Medicine, 2016.

Cardiac arrest secondary to BB and CCB toxicity
Standard ACLS
Sodium bicarbonates if signs of sodium channel blockade (wide QRS)
Calcium IV if calcium channel blockade
Lipid emulsion therapy
VA-ECMO (ECLS) if available

ANTIDOTES:

Please consult: https://www.ciusss-capitalenationale.gouv.qc.ca/antidotes

Doses for first line treatments:

Sodium bicarbonate bolus:

1 – 2 mmol/kg IV direct to be repeated as needed until QRS improvement (blood pH max 7.55)

- Adults and children aged 2 yo and more: Use a 7.5% (0.89 mmol/mL) or a 8.4% (1 mmol/mL) solution
- Children **<** 2 yo: Use a 4.2% (0.5 mmol/mL) solution max 8 mmol/kg/day (do not administer IV direct)

Calcium IV:

Peripheral IV or central line

- Adults: 3 to 6 g (30 – 60 mL) of calcium gluconate 10% IV direct, to be repeated as needed every 10 min for a maximum of 4 doses and then check calcemia (target mild hypercalcemia)
- Children: 30 – 60 mg/kg (0.3 – 0.6 mL/kg) of calcium gluconate 10% IV direct, to be repeated as needed every 10 min for a maximum of 4 doses and then check calcemia (target mild hypercalcemia)

Central line

- Adults: 1 to 2 g (10 – 20 mL) of calcium chloride 10% IV direct, to be repeated as needed every 10 min for a maximum of 4 doses and then check calcemia (target mild hypercalcemia)
- Children: 10 to 20 mg/kg (0.1 to 0.2 mL/kg) of calcium chloride 10% IV direct, to be repeated as needed every 10 min for a maximum of 4 doses and then check calcemia (target mild hypercalcemia)

High-dose insulin (expect 30 – 60 min before observing an effect):

- High dose insulin IV (regular): 1 unit/kg bolus followed by an infusion at 1 unit/kg/h (maintain euglycemia with dextrose)
- For the incremental doses of high-dose insulin IV (regular): Progressive increase of the infusion rate up to 10 units/kg/h (maintain euglycemia with dextrose)
- Plan to administer D50% in adults or D25% in children by a central line to limit IV fluids. As an example, a 70 kg patient could need an initial bolus of 50 mL of D50% followed by an IV infusion of 0.5 – 1 g/kg/h, which could be equivalent to 70 – 140 mL/h of D50%

Information concerning vasopressors and inotropes for centers where protocols are not available: High doses are expected at high concentrations to limit IV fluids.

Vasopressors	Indications	Dose	Receptors			
			α1	ß1	ß2	Dopamine
Norepinephrine	Increases mostly peripheral vascular resistances, but may increase heart rate and contractility. Often used in undifferentiated shock and vasoplegic shock.	0.01 à 3 mcg/kg/min (no max dose)	+++++	+++	++	N/A
Epinephrine	Increases heart rate, contractility, peripheral vascular resistances, decreases bronchospasms. Often used in bradycardia cardiogenic shock or anaphylactic shock.	0.01 à 0.50 mcg/kg/min (no max dose)	+++++	++++	+++	N/A
Dopamine	Increases heart rate and contractility from 3 to 10 mcg/kg/min, but increases more peripheral vascular resistances from 10 to 20 mcg/kg/min. Often used at low dose for bradycardia and at higher dose for vasoplegic shock.	2 à 20 mcg/kg/min (less benefit if more than 20 mcg/kg/min)	+++ (10 to 20 mcg/kg /min)	++++ (3 to 10 mcg/kg /min)	++ (3 to 10 mcg/kg /min)	+++++ (0.3 to 3 mcg/kg/min)