

LAST: Rx

Treatment for local anesthetic systemic toxicity (LAST) can vary based on clinical presentation. However, strong consideration should be given to calling for help early regardless of the symptom severity as the patient's condition can deteriorate rapidly. Additionally, hemodynamic compromise can be resistant to treatment and early consideration should be given to mobilizing resources to place the patient on ECMO.

The primary treatment of LAST centers around lipid emulsion therapy. 1.5mL, up to 100mL, should be given over 2-3 minutes with repeat boluses at twice the speed if the patient remains hemodynamically unstable. Following any boluses, an infusion is typically started of 0.25mL/kg/hr for 15-30 minutes. The max dose of lipid emulsion is 12mL/kg. Lipid emulsion is felt to work as a lipid sink, acting a reservoir for lipophilic local anesthetics, and a lipid shuttle, moving local anesthetics from vessel rich areas like the brain and heart, to vessel poor areas such as muscle and fat. Consequently it likely works better on lipid soluble local anesthetics such as bupivacaine and ropivacaine as opposed to lidocaine.

If the patient is seizing, the airway should be controlled and a benzodiazepine is the preferred treatment. Lipid emulsion can be withheld if the patient is hemodynamically stable (especially in the setting of a low volume of local anesthetic such as direct carotid injection) but you should be prepared for the patient to deteriorate and the timing of lipid emulsion administration in seizures is controversial.

ACLS differs slightly in a patient who arrested from LAST:

- Epinephrine dosing should be reduced, starting with 1mcg/kg
- Avoid local anesthetics and other sodium channel blockers
- Avoid beta blockers and calcium channel blockers (cardiac depressants)
- Avoid vasopressin (risk of pulmonary hemorrhage in animal studies)

Observation recommendations, per ASRA, are 2 hours after a seizure and 4-6 hours after cardiac instability.

