Local Anesthetic Systemic Toxicity after Transversus Abdominis Plane Block in the Parturient:
Early Recognition and Treatment

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- Local anesthetic systemic toxicity (LAST) is a known and potentially fatal complication.
- Incidence of LAST is 0.27 episodes per 1,000 peripheral nerve blocks.
- Factors such as local anesthetic dose and location are risk factors for LAST.
- LAST in parturients is not well-studied and these patients may be at higher risk.
- Transversus abdominis plane block (TAP) is becoming increasingly popular for post-operative analgesia after cesarean delivery.
- Proper LAST education, training, and resources should be available in Labor and Delivery centers.

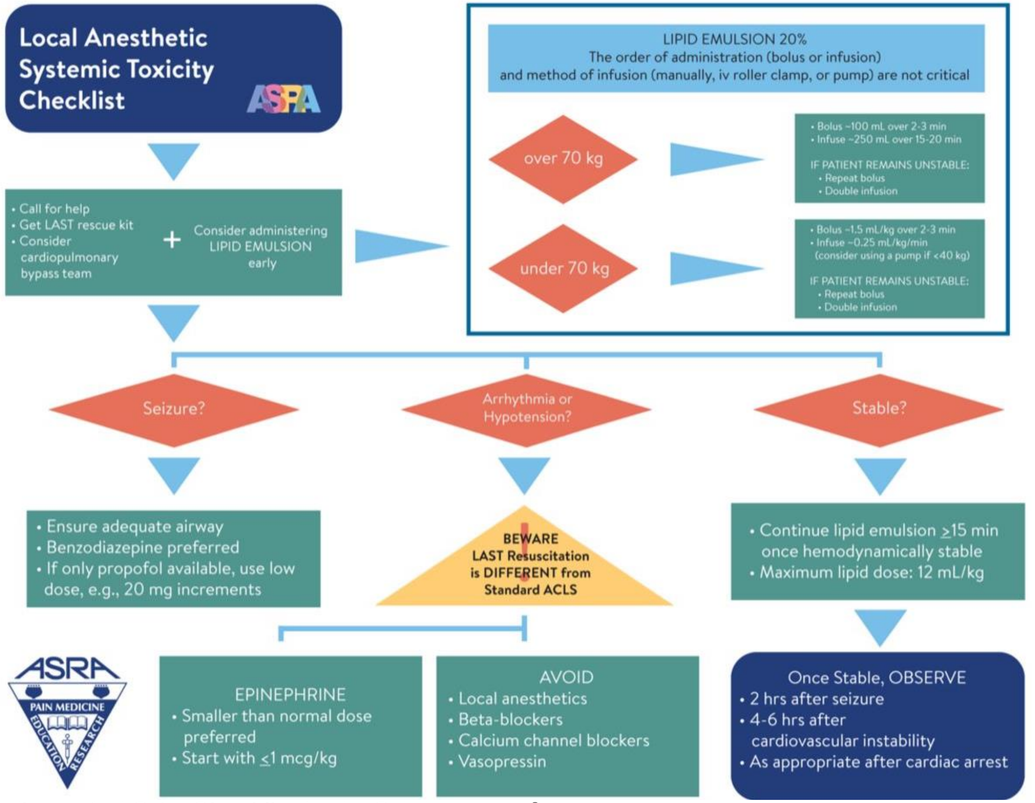

Figure 1: ASRA Checklist for LAST Treatment[6]

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- A 29-year-old 75kg female G7P2143 presented for scheduled repeat cesarean.
- Her past medical history was significant for prior cesarean sections and anaphylaxis to morphine.
- The anesthetic plan was for spinal bupivacaine and fentanyl, with post-operative bilateral TAP block.
- After an uncomplicated delivery, the patient received an ultrasound guided TAP block using 40mL 0.25% bupivacaine.
- In the PACU she experienced a grand-mal seizure which resolved without pharmacologic intervention.
- The presumed diagnosis was LAST in the setting of bupivacaine administration.
- Fat emulsion (Intralipid) 100cc bolus was initiated, followed immediately by an additional 200cc over the next 20 minutes.
- There was resolution of symptoms without additional seizure or other signs of LAST such as arrhythmia or cardiovascular collapse.
- The remainder of her post-operative course was uncomplicated, and she was discharged on post-partum day 2.

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- LAST has been recognized as a potential cause for maternal morbidity and mortality.
- Incidence of LAST may become more common with increasing use of TAP blocks for cesarean deliveries.
- Parturients are at an increased risk for LAST, partially due to:
  - Increased neuronal sensitivity and decreased protein binding of local anesthetics
  - Anatomic changes that lead to vascular engorgement and increased tissue blood flow
- LAST can happen in peripartum patients, even if the dose used is less than ascribed toxic levels.
- Epinephrine added to local anesthetic blocks may be useful for detection and reduction of intravascular uptake.
- The implementation of acute lipid resuscitation helps facilitate reduction in morbidity and mortality.
- Providers must anticipate this potential complication and be comfortable with timely and appropriate intralipid intervention.
  - 100cc bolus for patients >70kg, and 1.5cc/kg for patients <70kg
  - Support hemodynamics and aim to break seizure activity
- Cognitive aids and checklists can help facilitate rapid responses to emergency situations.

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