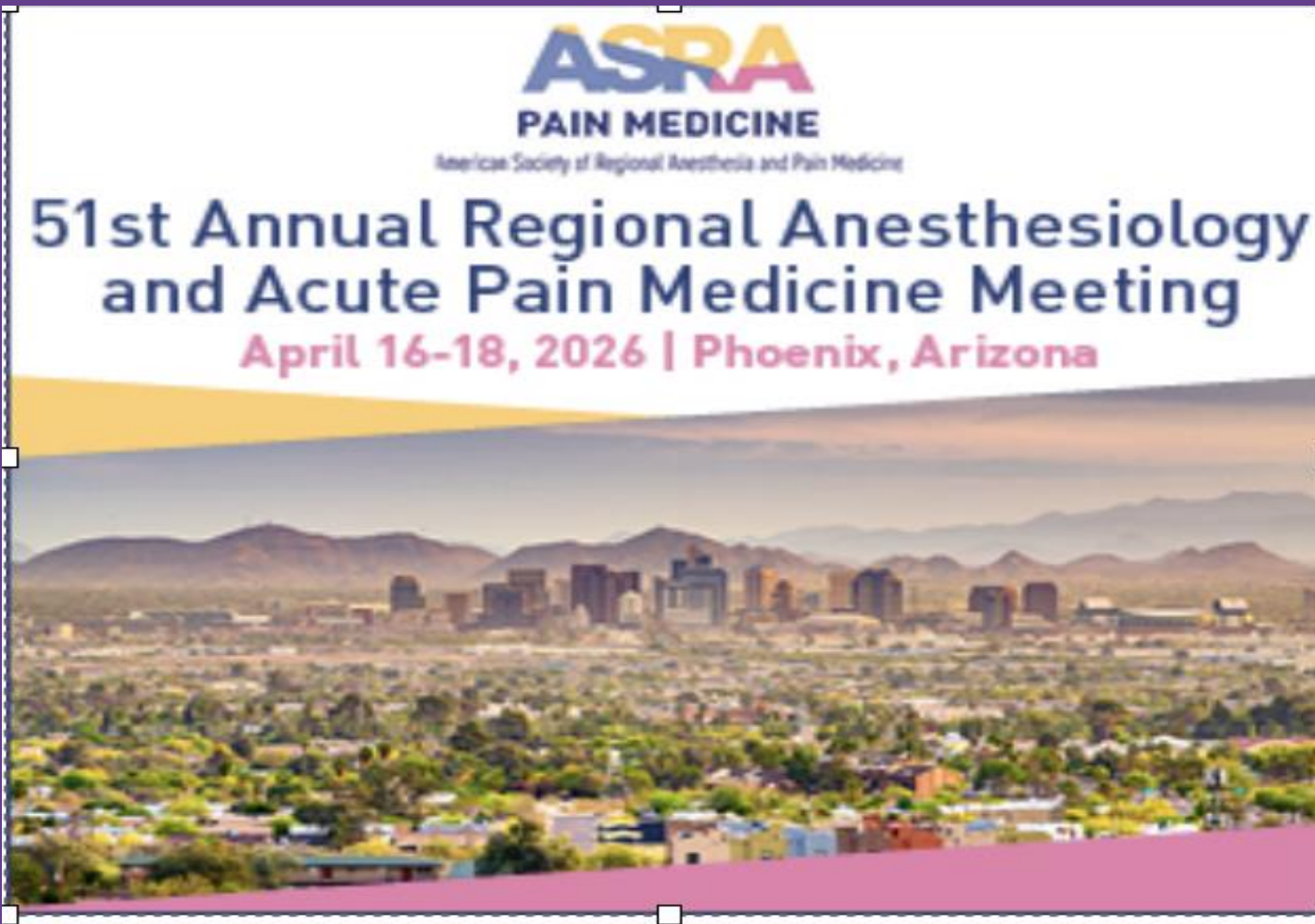




- CASE DESCRIPTION
- 87 year old 39 kg patient
 - Add-on Incision & Drainage for palmar abscess
 - PMH: bilateral neuropathy due to carpal tunnel, digit autoamputation due to osteomyelitis
 - METs > 4
 - Labs/Images: Cr 2.17 mg/dl, K 5.3 meq/L, no EKG/TTE
 - Anesthetic Course Timeline
 - 15:03: Axillary Nerve block- 25 ml 0.5% ropivacaine -> 125 mg
 - Local Max ropivacaine 117 mg
 - 15:16: intra-op sedation w propofol gtt
 - 16:14: end surgery, propofol stopped
 - 16:29: HD stable in PACU (HR 109); disoriented but redirectable,
 - 16:50: agonal breaths, PEA arrest, Coded
 - 17:04: 6th round CPR- Intralipid bolus
 - 17:10: 9th round CPR- ROSC
 - EKG RBBB alternating LBBB
 - Code ABG: 7.13/50 K 5.7 meq/L

- ICU Course: escalating pressors: epi, nor-epi, vaso, despite intralipid gtt; TTE- global hypokinesis & reduced systolic function; EKG narrow complex tachycardia vs 2nd/3rd degree block; patient placed on comfort care per family

A CASE OF CHALLENGING DIAGNOSIS IN A PATIENT WITH POSSIBLE LATE-ONSET LOCAL ANESTHETIC SYSTEMIC TOXICITY

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Local Anesthetic Systemic Toxicity, although rare, should be considered in any patient with recent local anesthetic, despite delayed signs and symptoms, especially in those with multiple risk factors.

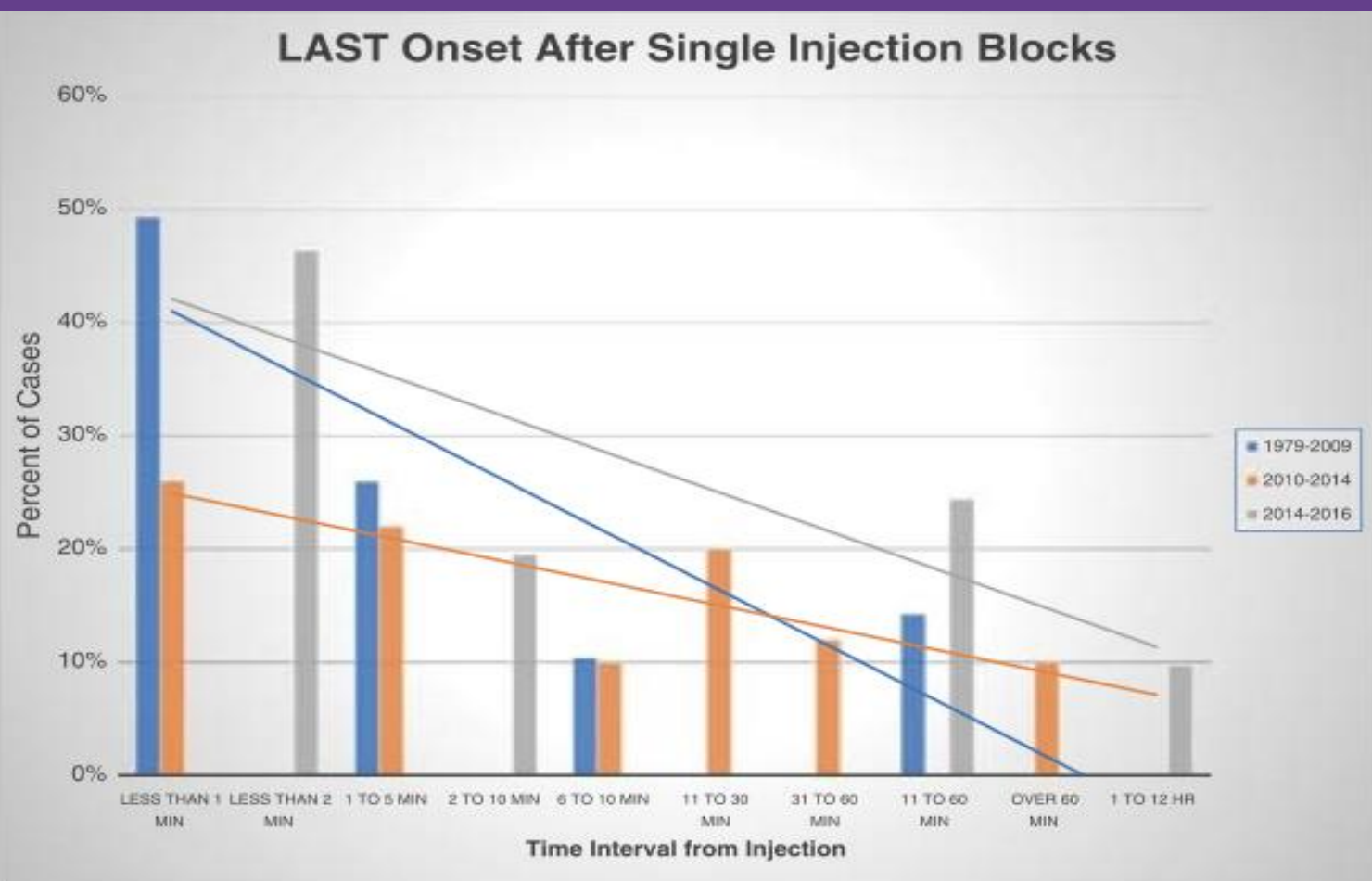
References

- Song K, Blankenship RB, Derian A. Local Anesthetic Toxicity. [Updated 2025 Sep 16]. : StatPearls Publishing; 2025 Jan
- Neal JM, Barrington MJ, Fettiplace MR, Gitman M, Memtsoudis SG, Mörwald EE, Rubin DS, Weinberg G. The Third American Society of Regional Anesthesia and Pain Medicine Practice Advisory on Local Anesthetic Systemic Toxicity: Executive Summary 2017. Reg Anesth Pain Med. 2018 Feb;43(2):113-123.
- Di Gregorio G, Neal JM, Rosenquist RW, Weinberg GL. Clinical presentation of local anesthetic systemic toxicity: A review of published cases, 1979–2009. Reg Anesth Pain Med. 2010;35:181–187.
- Wu L, Zhang W, Zhang X, Wu Y, Qu H, Zhang D, Wei Y. Optimal concentration of ropivacaine for brachial plexus blocks in adult patients undergoing upper limb surgeries: a systematic review and meta-analysis. Front Pharmacol. 2023 Nov.
- Wang S, Fang H, Qin J, Liu W, Wang W, Pei Y, Chen Y, Lin C. Comparison of the efficacy of costoclavicular space brachial plexus blockade with 0.5% versus 0.375% ropivacaine: a randomized, double-blind, single-centre, noninferiority clinical trial. Can J Anaesth. 2023 Jan;70(1):106-115. English. doi: 10.1007/s12630-022-02327-9. Epub 2022 Sep 15. PMID: 36109453

LAST Incidence

ASRA & Pain Medicine's Third Practice Advisory: 1.04 /1000 peripheral nerve blocks in a 15-y period in database query of over 710,000 PNBs

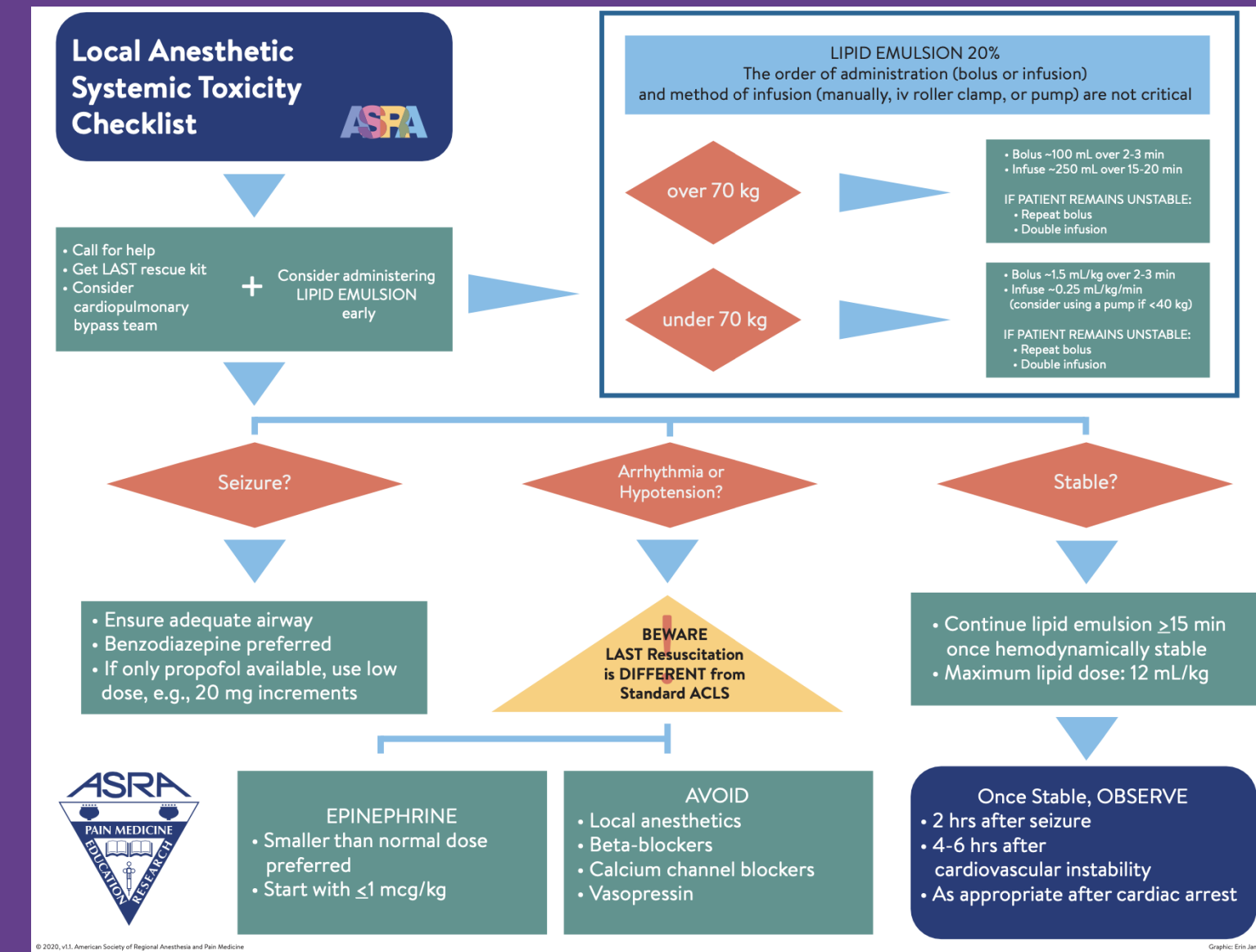
Classically presents within 5 min of injection, rarely over 1h, w/ few case reports



Risk Factors

TABLE 3. Risk Factors for LAST	
• Patient characteristics	◦ Extremes of age—less than 16 or more than 60 years
	◦ Low muscle mass—particularly with neonates, infants, and the debilitated elderly
	◦ Female > male
	◦ Comorbidities
• Local anesthetic characteristics	◦ Bupivacaine has a lower safety margin and resuscitation is more difficult in the event of LAST, but local anesthetics such as ropivacaine and lidocaine still account for a significant proportion of LAST events.
	◦ Block site, total local anesthetic dose, test dosing, and patient comorbidities are more predictive of high plasma levels of local anesthetic than are body weight or body mass index.
	◦ Local anesthetic infusions are particularly problematic after 1 to 4 days and in patients of small body mass.
	◦ Seizure is up to 5 times more likely after PNB than epidural block.
• Practice setting	◦ Up to 20% of LAST cases occur outside of the hospital setting.
	◦ Nonanesthesiologists are involved in up to 50% of LAST cases.

Recall decreased epi dose in LAST resuscitation due to arrhythmogenic effects



- Key Points
- LAST presentation & onset is variable: this patient presented ~ 2h after exposure with likely no CNS prodrome
 - In high-risk patients consider using a decreased concentration of local. Wang et al. compared 0.5% and 0.375% ropivacaine blockade and found no significant difference in onset time but 0.5% produced a significantly longer duration of sensory & motor blockade than 0.375%
 - In high-risk patients dose on lean body weight & consider observation for 30-45 min