Local Anesthesia Toxicity

Nicole McCleery
nicole.mccleery@otterbein.edu

Follow this and additional works at: https://digitalcommons.otterbein.edu/stu_msn

Part of the Anesthesiology Commons, Cardiovascular System Commons, Critical Care Nursing Commons, Medical Education Commons, Medical Physiology Commons, Musculoskeletal System Commons, Nervous System Commons, and the Physiological Processes Commons

Recommended Citation
McCleery, Nicole, "Local Anesthesia Toxicity" (2017). Master of Science in Nursing (MSN) Student Scholarship. 235.
https://digitalcommons.otterbein.edu/stu_msn/235
Local Anesthesia Toxicity
Nicole McCloud, RN, BSN, CCRN

Introducion
- Local anesthesia (LA) provides a way to relieve temporary pain in a small portion of the body and has been used for over 100 years (Fencl, 2015).
- LA prevents the passage of surgical stimuli into the central nervous system (CNS) making a surgical area numb or anesthetized (Noble, 2015).
- Advanced cardiac life support (ACLS) should be initiated immediately to stabilize the first-line treatment for this complication (Noble, 2015).

Signs and symptoms
- The classic description is progressive “biphasic” effect on the CNS then to the CVS.
- CNS excitation progresses to CNS depression
- Systemic toxicity from local anesthesia (LA) occurs due to accidental intravascular injection, absorption from the tissues or repeated doses without balanced elimination
- “The pathophysiology of LAs are thought to be an extension of their pharmacology” (Ciechanowicz & Patil, 2012).
- Blocking cardiac voltage-gated sodium channels, LA, prevent myocyte depolarization resulting in vasopressor and sodium channels, LA, affect inhibitory and excitatory pathways in the brain, LAs can cause hypotension and syncope.
- LA are long acting amide (2015).
- Local anesthetic systemic toxicity (LAST) (Joshi, Gandhi, Shah, Gadsden, & Weinberg, 2015).
- Stage 1: Initial Focus
- Airway management: ventilate with 100% oxygen
- Stage 2: Stimulation
- Benzodiazepines: helpful in reducing toxicity and potentially reversing LAST (Nicholas & Thornton, 2015).
- Stage 3: Cardiovascular
- Myocyte ATP is reduced which limits energy available for conduction action, myosin cycle and ion channel instability
- Table 1: Check list created by ASRA.

References Cont.