

Local Anesthetic Toxicity: Signs / Symptoms

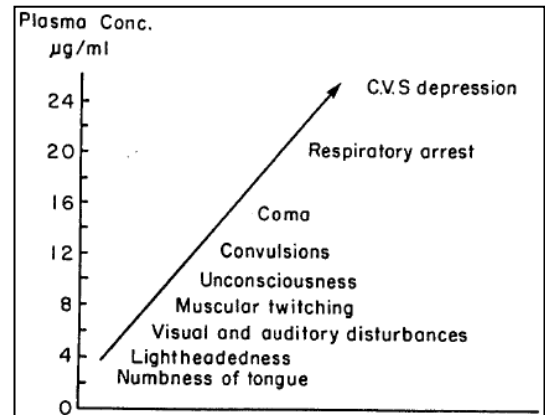
Anesthetic Pearls: Anesthetic Implications of Local Anesthetic Toxicity

Signs / Symptoms (from smallest to greatest local anesthetic blood level)

1. Dry mouth
2. Dizziness
3. Lightheaded
4. Difficulty focusing
5. Tinnitus
6. Muscle twitching
7. Seizures - grand mal

**All are excitatory responses to blockade of CNS inhibition.

When both pathways of excitatory and inhibitory actions are blocked, it may lead to coma, respiratory arrest, and cardiovascular depression (direct effect on cardiac and smooth muscle).



Three factors that lower the symptomatic threshold:

1. Rapidity of rise in blood level
2. Acidosis
3. Potency of anesthetic

Comments on Bupivacaine:

Bupivacaine (and to a lesser degree Etidocaine) can lead to serious arrhythmias V-tach, V-fib, and ultimately asystole. These cardiac disturbances can occur before the seizure threshold. Also, the cardiovascular effects may be partially mediated by CNS which can explain the appearance of early arrhythmias. Hypoxia and acidosis will enhance toxicity thereby making resuscitation very difficult. Pregnancy also enhances toxicity. When talking about cardiac effects of Bupivacaine, there is a paradigm of "**fast in - slow out**" as opposed to other local anesthetics which are "fast in - fast out" secondary to protein binding. If a patient becomes cardiac toxic with Bupivacaine, there are two treatments: crashing onto CPB and intravenous Intralipid therapy.