



Liposomal Bupivacaine: A Novel, Long Acting Local Anesthetic

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Abstract:

Post-operative pain control continues to be a problem in surgical patients. A novel formulation of an ultra-long acting local anesthetic is now available in the US: Exparel or liposomal bupivacaine. Liposomal bupivacaine is made up of microscopic polyhedral particles. The liposomes encapsulate the drug, bupivacaine hydrochloride, without altering molecular structure. This provides the reliable low dose release of the bupivacaine over time, providing long-lasting, post-surgical pain relief over the course of 2-3 days. This eliminates the need for titration of a single dose or the need for external devices or pumps to prolong analgesia. Plasma bupivacaine levels may persist for 96 hours after injection. Peak plasma concentrations are lower in magnitude and occur later in time than after a similar injection with bupivacaine HCl. Plasma bupivacaine concentrations are not correlated with local efficacy. Safety profile was evaluated in 10 clinical trials in patients undergoing a variety of surgical procedures. Most common adverse events were nausea, constipation and vomiting. Exparel demonstrated a favorable cardiac profile. There was no cardiac toxicity and no QTc prolongation, even at supra-therapeutic doses. Rate of absorption is dependent on total dose administered, route of administration and vascularity of the surgical site. Efficacy has been established. Multiple trials demonstrated a significant reduction in pain intensity scores and a reduction in overall opioid consumption compared to placebo. Liposomal bupivacaine is a safe and effective novel drug to treat post-surgical pain.



Biography:

Dr. Tirotta has been an active member of Miami Children's Hospital medical staff since 1991, practicing with the Department of Anesthesiology; he has served as the Director of Cardiac Anesthesia since 2002. He has served as Chief of the Department of Anesthesia since July 2017. He also has a clinical appointment with the Department of Anesthesiology at The University of Miami School of Medicine.

Recent Publications:

1. Christopher F Tirotta, et al J Cardiothorac Surg 2020.
2. Christopher F Tirotta, et al J Cardiothorac Surg 2019.
3. Christopher F Tirotta, et al Clin Appl Thromb Hemost 2019.
4. Christopher F Tirotta, et al J Clin Anesth 2017.
5. Christopher F Tirotta, et al Paediatr Anaesth 2017.

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