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# PEDIATRIC NURSING AND HEALTHCARE

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# PERINATAL NURSING AND ADOLESCENT PSYCHIATRY

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## Liposomal bupivacaine: A novel long-acting local anesthetic

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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. The 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 a supratherapeutic dose. The rate of absorption is dependent on the 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 new drug to treat post-surgical pain.

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