

Solace® Information Sheet

Researchers are continuously investigating pain management technologies and current pain management techniques. As patient safety is our top priority, we make every effort to educate our consumers with the most up to date information available. This document attempts to summarize the findings from recent literature which may be relevant to the use of the Solace® Post Operative Pain Management Infusion System. Please visit our website (www.solacepainrelief.com) for the most up to date information.

Recent Investigations on Chondrolysis

- Gomall et al. found that continuous intra-articular infusion of bupivacaine with the use of postoperative pain pumps showed profound chondrotoxic effects. They suggest not using pain infusion devices in small joint spaces where exposure of cartilage to bupivacaine is expected [1].
- Kamath et al. review the mounting evidence that intra-articular injection of local anesthetics, especially bupivacaine, may cause significant cartilage injury. However, there is no established definitive causal relationship between one-time anesthetic injections and cartilage loss in patients. Kamath et al. suggest replacing bupivacaine with a less toxic long-acting anesthetic agent [2].
- Piper and Kim show that bupivacaine is significantly toxic to human articular chondrocytes both in intact cartilage and in cultured chondrocytes after only a 30 minute exposure, while ropivacaine is significantly less chondrotoxic and may be a safer alternative for intra-articular analgesia [3].
- Dragoo et al. investigated the in vitro chondrotoxicity of various anesthetics used in pain pumps. They found that all anesthetics containing epinephrine were chondrotoxic and should not be used in intra-articular pain pumps. Additionally, the use of 0.5% bupivacaine for greater than 48 hours in an intra-articular pain pump is not recommended [4].

Use of Pain Pumps with Autotransfusion Systems

There is a potential risk of intravascular infusion of the local anesthetic if the pain pump is initiated in conjunction with an autotransfusion system. It is recommended that the pain pump remain OFF until the transfusion and/or blood collection from the surgical site is terminated [5].

Use of Pain Pumps After Shoulder Surgery

Several studies have investigated the use of local anesthetics after major shoulder surgery [6-9]. Many of these studies found that the use of a local anesthetic delivered via pain pump significantly reduces patient recovery time and pain compared to the use of traditional oral narcotics for pain management [7, 8]. However, the potential toxicity associated with the use of pain pumps for shoulder surgery is unclear. One study recommends that physicians not enter the intra-articular space during shoulder surgery and only use the subacromial space [9]. Several studies also recommend using ropivacaine instead of bupivacaine [6, 8].

Fluid Build-Up at Distal End of Extremities

There is also a potential risk of post surgical complications due to infusion of too much fluid into the distal end of extremities (fingers, toes, etc.) [5]. Caution should be used when selecting the flow rate and volume of a pain pump for use in surgical sites in the distal ends of extremities.

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