Administration Case Report With EXPAREL

This case report represents the individual experience of Dr Bruce Ramshaw and is intended to demonstrate his methodology for using EXPAREL in a specific reconstructive surgical procedure.

Pacira Pharmaceuticals, Inc., recognizes that there are alternative methodologies for administering local anesthetics, as well as individual patient considerations, when selecting the dose for a specific procedure.

EXPAREL is indicated for administration into the surgical site to produce postsurgical analgesia.

### CASE INFORMATION

<table>
<thead>
<tr>
<th>Physician Name</th>
<th>Bruce Ramshaw, MD, FACS</th>
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<tbody>
<tr>
<td>Affiliation</td>
<td>University of Tennessee Graduate School of Medicine, Knoxville</td>
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<tr>
<td>Surgical Case Performed</td>
<td>Open abdominal mesh removal, open abdominal wall reconstruction with TAR, and placement of new mesh</td>
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<td>Inpatient or Outpatient Procedure</td>
<td>Inpatient</td>
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### PATIENT CHARACTERISTICS

| Gender | Female |
| Age | 60 years |
| Patient History and Characteristics | Patient presented with chronic pain* and significant eventration following an open abdominal wall reconstruction, which was previously done using an open external oblique component separation technique with a biologic mesh onlay |
| Pathology | N/A |

### PROCEDURAL DETAILS

| Incision Size | 25-cm inverted T incision with resection of skin and soft tissue |
| Preoperative Analgesics Used | Percocet 5/325 PO QD-TID PRN |
| Intraoperative Analgesics Used | General anesthesia |

### Dose of EXPAREL and Total Volume Used

- EXPAREL: 20 mL
- Bupivacaine 0.25%: 30 mL
- Normal Saline: 100 mL

Total: 150 mL

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PO, by mouth; PRN, as needed; QD, once daily; TAR, transversus abdominis release; TID, three times daily.

*EXPAREL is not approved to treat chronic pain.

The recommended dose of EXPAREL is based on the size of the surgical site, the volume required to cover the area, and individual patient factors that may impact the safety of an amide local anesthetic. The maximum dose of EXPAREL should not exceed 266 mg.

EXPAREL can be administered undiluted (20 mL) or diluted to increase volume up to a total of 300 mL (final concentration of 0.89 mg/mL [ie, 1:14 dilution by volume]) with normal (0.9%) saline or lactated Ringer’s solution.

Bupivacaine HCl may be administered immediately before EXPAREL or admixed in the same syringe, as long as the ratio of the milligram dose of bupivacaine HCl to EXPAREL does not exceed 1.2. Admixing may impact the pharmacokinetic and/or physiochemical properties of EXPAREL, and this effect is concentration dependent. The toxic effects of these drugs are additive and their administration should be used with caution, including monitoring for neurological and cardiovascular effects related to toxicity. Other than with bupivacaine, EXPAREL should not be admixed with other drugs prior to administration.

Please see Important Safety Information on the last page and refer to the accompanying full Prescribing Information for complete Dosage and Administration information before using EXPAREL.
For this procedure, Dr. Ramshaw mixed EXPAREL, 0.25% bupivacaine, and normal saline in a mixing bowl. He then filled two 10-mL syringes with a 21-gauge needle and refilled these syringes as needed during the procedure.

Dr. Ramshaw planned to infiltrate as follows:

- **Step #1: Skin and subdermal infiltration**
  Prior to the initial incision, Dr. Ramshaw infiltrated approximately 50 mL of expanded EXPAREL laterally along the planned incision.

- **Step #2: Abdominal wall infiltration**
  Dr. Ramshaw dissected laterally in the retrorectus space, anterior to the posterior rectus fascia. This allowed him to visualize the neurovascular bundles traversing from the transversus abdominis posteriorly through the rectus muscle anteriorly. He then infiltrated approximately 50 mL of expanded EXPAREL medial to the neurovascular bundles on both the left and the right sides of the abdominal wall (total volume of approximately 100 mL) to provide an anesthetic block and hydrodissection in the plane between the transversus abdominis and the peritoneum.

After completing bilateral infiltration and anesthetic block, Dr. Ramshaw performed a transversus abdominis release by transecting the transversus abdominis vertically, just medial to the neurovascular bundles, for mesh placement.

Because the patient had a previous open anterior component separation bilaterally, a permanent synthetic mesh was sewn bilaterally to the lateral cut transversus abdominis fascia. Following placement of the new surgical mesh, Dr. Ramshaw infiltrated any remaining expanded EXPAREL into the surrounding musculofascial tissue.
PROPER TECHNIQUE IS CRUCIAL FOR ANALGESIC COVERAGE

When infiltrating EXPAREL, Dr Ramshaw makes sure to use an expansion volume that is appropriate for the size of the surgical site he is infiltrating. He then infiltrates using a 21- or 22-gauge, 1.5-inch needle. It is important to ensure all layers of the surgical incision are infiltrated in a controlled and meticulous manner, and that EXPAREL is injected within the tissue planes. To do this, Dr Ramshaw inserts the needle approximately 0.5 cm to 1 cm into the peritoneal, musculofascial, and subdermal tissue planes. Dr Ramshaw then uses a continuous motion fanning, or moving needle technique, where EXPAREL is slowly injected while withdrawing the needle in order to adequately infiltrate all layers of the skin. Dr Ramshaw aspirates prior to injection to reduce the risk of intravascular injection.

Watch Dr Ramshaw infiltrate with EXPAREL at www.EXPAREL.com

Important Safety Information

EXPAREL is contraindicated in obstetrical paracervical block anesthesia.

In clinical trials, the most common adverse reactions (incidence ≥10%) following EXPAREL administration were nausea, constipation, and vomiting.

EXPAREL is not recommended to be used in the following patient population: patients <18 years old and/or pregnant patients.

Because amide-type local anesthetics, such as bupivacaine, are metabolized by the liver, EXPAREL should be used cautiously in patients with hepatic disease. Patients with severe hepatic disease, because of their inability to metabolize local anesthetics normally, are at a greater risk of developing toxic plasma concentrations.

Warnings and Precautions Specific to EXPAREL

EXPAREL is not recommended for the following types or routes of administration: epidural, intrathecal, regional nerve blocks, or intravascular or intra-articular use.

Non-bupivacaine-based local anesthetics, including lidocaine, may cause an immediate release of bupivacaine from EXPAREL if administered together locally. The administration of EXPAREL may follow the administration of lidocaine after a delay of 20 minutes or more. Formulations of bupivacaine other than EXPAREL should not be administered within 96 hours following administration of EXPAREL.

Warnings and Precautions for Bupivacaine-Containing Products

Central Nervous System (CNS) Reactions: There have been reports of adverse neurologic reactions with the use of local anesthetics. These include persistent anesthesia and paresthesias. CNS reactions are characterized by excitation and/or depression.

Cardiovascular System Reactions: Toxic blood concentrations depress cardiac conductivity and excitability which may lead to dysrhythmias sometimes leading to death.

Allergic Reactions: Allergic-type reactions (eg, anaphylaxis and angioedema) are rare and may occur as a result of hypersensitivity to the local anesthetic or to other formulation ingredients.

Chondrolysis: There have been reports of chondrolysis (mostly in the shoulder joint) following intra-articular infusion of local anesthetics, which is an unapproved use.

Disclosure: Dr Ramshaw is a paid consultant for Pacira Pharmaceuticals, Inc.