THE USE OF EXPAREL IN ABDOMINAL-WALL FIELD BLOCKS

EXPAREL is indicated for single-dose infiltration in adults to produce postsurgical local analgesia and as an interscalene brachial plexus nerve block to produce postsurgical regional analgesia. Safety and efficacy have not been established in other nerve blocks.

Please see Important Safety Information throughout and refer to accompanying full Prescribing Information.
Abdominal-wall field blocks are part of a multimodal strategy for postsurgical pain management

- Abdominal-wall field blocks use a local anesthetic to provide effective regional analgesia for a range of procedures.
- **Transversus abdominis plane (TAP) field blocks** provide analgesia to the anterior abdominal wall and involve administration of a local anesthetic into the fascial plane between the transversus abdominis and internal oblique muscles.
- Approaches to abdominal-wall field blocks have been evolving:
  - The TAP block was originally described as a landmark-guided field block based on the lumbar triangle.
  - Ultrasound-guided TAP blocks allow visualization of the needle and local anesthetic in the plane.
  - Additional approaches have been and continue to be developed, including subcostal TAP, 4-point TAP, rectus sheath blocks, and quadratus lumborum (QL) blocks.
- TAP blocks can be administered by the anesthesiologist or the surgeon.

### Abdominal-wall field blocks can achieve sensory block in one of several areas

**Comparison of sensory blocks achieved**

- **Classic TAP block**
  - Yellow semicircle over the lower abdomen (dermatomes T10 to L1)

- **Subcostal TAP block**
  - Can vary, but approximately the shaded gray in the upper abdominal quadrant (dermatomes T6 to T10-T12)

- **Bilateral 4-point TAP block**
  - Green shape overlapping the areas of coverage of classic and subcostal TAPs (dermatomes T6 to T12)

- **Rectus sheath block**
  - Narrow black oval over abdominal midline (dermatomes T6 to T12)

- **QL block**
  - Large purple circle over abdominal midline (dermatomes T4 to L1)

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**Important Safety Information**

EXPAREL is contraindicated in obstetrical paracervical block anesthesia.

Adverse reactions reported with an incidence greater than or equal to 10% following EXPAREL administration via infiltration were nausea, constipation, and vomiting; adverse reactions reported with an incidence greater than or equal to 10% following EXPAREL administration via interscalene brachial plexus nerve block were nausea, pyrexia, and constipation.
Target the appropriate nerves to achieve the desired abdominal-wall field block

Ultrasound-guided infiltration of the appropriate nerves can achieve a range of sensory blocks

Important Safety Information (continued)

If EXPAREL and other non-bupivacaine local anesthetics, including lidocaine, are administered at the same site, there may be an immediate release of bupivacaine from EXPAREL. Therefore, EXPAREL may be administered to the same site 20 minutes after injecting lidocaine.

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.

Please refer to accompanying full Prescribing Information.
Performing a classic TAP block in abdominal surgeries

Administration of a classic TAP block

In a classic TAP block, a local anesthetic is placed in the fascial plane between the internal oblique and the transversus abdominis muscles.\(^8\,^9\)

Nerves involved:\(^4\):
- Dermatomes T10 to L1

Common applications/procedures for a classic TAP block

- Lower abdominal surgeries (incisions below the umbilicus)\(^10\)
  - Cesarean delivery\(^2\)
  - Colectomies\(^11\)
  - Hernia repair, including inguinal hernia\(^2\)
- Bilateral TAPs can be given for Pfannenstiel incisions or laparoscopic surgery below the umbilicus\(^3,^10\)

Suggested dose and volume range of EXPAREL for a classic TAP block

- Example dosing and expansion ≥30 mL per side
  - **Bilateral classic TAP block**
    - 20 mL of 266 mg EXPAREL
    - + 20 mL of 0.25% bupivacaine
    - + 20 mL of normal saline
  - 60 mL total volume
  - Inject 30 mL per side.

Important Safety Information (continued)

Warnings and Precautions Specific to EXPAREL

Avoid additional use of local anesthetics within 96 hours following administration of EXPAREL.
Performing a bilateral subcostal TAP block in abdominal surgeries

Administration of a bilateral subcostal TAP block

In a subcostal oblique TAP block, a local anesthetic is placed between the rectus abdominis and the posterior rectus sheath or between the rectus abdominis and the transversus abdominis. Nerves involved:

- Dermatomes T6 to T10-T12

Common applications/procedures for a subcostal TAP block

- Upper abdominal surgeries (incisions above the umbilicus)
  - Laparoscopic cholecystectomy
  - Nephrectomy
  - Colorectal
- Upper midline laparotomy
- Laparoscopic/robotic surgery
- Hysterectomy
- Can be added to a classic TAP block for coverage above and below the umbilicus

Suggested dose and volume range of EXPAREL for a subcostal TAP block

- Example dosing and expansion ≥30 mL per side

<table>
<thead>
<tr>
<th>Bilateral subcostal TAP block</th>
<th>20 mL of 266 mg EXPAREL</th>
<th>+ 20 mL of 0.25% bupivacaine</th>
<th>+ 20 mL of normal saline</th>
</tr>
</thead>
<tbody>
<tr>
<td>60 mL total volume</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Inject 30 mL per side.</td>
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</tbody>
</table>

Important Safety Information (continued)

Warnings and Precautions Specific to EXPAREL (continued)

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

The potential sensory and/or motor loss with EXPAREL is temporary and varies in degree and duration depending on the site of injection and dosage administered and may last for up to 5 days, as seen in clinical trials.

Please refer to accompanying full Prescribing Information.
Performing a bilateral 4-point TAP block in major abdominal surgeries

**Administration of a bilateral 4-point TAP block**

In a 4-point TAP block, a local anesthetic is placed at the 4 injection sites used for a bilateral classic TAP block and subcostal TAP block.¹

Nerves involved:³
- Dermatomes T6 to T12

**Common applications/procedures for a bilateral 4-point TAP block**

- Major abdominal surgeries (combination block anesthetizes entire abdominal wall)
  - Laparoscopy¹⁵
  - Laparotomy¹⁵
  - Abdominal wall repair¹⁶
  - Colorectal³
  - Bariatric¹⁶

**Suggested dose and volume range of EXPAREL for a 4-point TAP block**

- Example dosing and expansion ≥20 mL per side

**Bilateral 4-point TAP block**
- 20 mL of 266 mg EXPAREL
- + 40 mL of 0.25% bupivacaine
- + 20 mL of normal saline

80 mL total volume
Inject 20 mL per site.

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**Important Safety Information (continued)**

**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 paresthesia. CNS reactions are characterized by excitation and/or depression.
Performing a rectus sheath block in midline incisions

Administration of a rectus sheath block

In a rectus sheath block, a local anesthetic is placed in the posterior border of the rectus abdominis muscle and the rectus sheath.\(^5\)

Nerves involved:\(^5\):
- Dermatomes T6 to T12

Common applications/procedures for a rectus sheath block

- Midline incisions, including\(^7\)
  - Umbilical hernia repairs
  - Incisional hernia repairs

Suggested dose and volume range of EXPAREL for a rectus sheath block

- Example dosing and expansion ≥20 mL per side

  **Bilateral rectus sheath block**
  - 20 mL of 266 mg EXPAREL
  - + 20 mL of 0.25% bupivacaine
  - 40 mL total volume
  - Inject 20 mL per side.

Important Safety Information (continued)

Warnings and Precautions for Bupivacaine-Containing Products (continued)

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

Please refer to accompanying full Prescribing Information.
Performing a QL block in more extensive abdominal surgeries

Administration of a QL block

In a QL block, a local anesthetic may be placed posterior to the QL, between the psoas muscle and the QL muscle, or at the junction of the external oblique and internal oblique aponeurosis and the QL. Nerves involved:
- Dermatomes T4 to L1

Common applications/procedures for a QL block

- QL blocks have been used in procedures requiring more extensive abdominal-wall coverage, including:
  - Exploratory laparotomy, large-bowel resection, ileostomy, open or laparoscopic appendectomy, cholecystectomy
  - Cesarean delivery, total abdominal hysterectomy
  - Open prostatectomy, renal transplant surgery, nephrectomy

Suggested dose and volume range of EXPAREL for a QL block

- Example dosing and expansion ≥25 mL per side

Bilateral QL block
- 20 mL of 266 mg EXPAREL
- + 20 mL of 0.25% bupivacaine
- + 10 to 20 mL of normal saline

50 to 60 mL total volume
Inject 25 to 30 mL per side.

Important Safety Information (continued)

Warnings and Precautions for Bupivacaine-Containing Products (continued)

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.
Performing TAP blocks in abdominal laparoscopic procedures

Administration of a laparoscopic TAP block

Laparoscopic TAP blocks are administered under direct vision, internally.\(^9\)

**View from the laparoscopic camera directed at the anterolateral abdominal wall\(^9\)**

**Internal bulge reflecting visible local anesthetic infiltration into the TAP block\(^9\)**

- Example dosing and expansion range $\geq 30$ mL per side

**Bilateral laparoscopic TAP block**

- $20$ mL of $266$ mg EXPAREL
- $+ 20$ mL of $0.25\%$ bupivacaine
- $+ 20$ mL of normal saline

$60$ mL total volume

Inject $30$ mL per side.

Images courtesy of Deborah Keller, MD.

Important Safety Information (continued)

**Warnings and Precautions for Bupivacaine-Containing Products (continued)**

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

**Methemoglobinemia:** Cases of methemoglobinemia have been reported with local anesthetic use.

Please refer to accompanying full Prescribing Information.
Dosing and administration information for EXPAREL

Dosing considerations
• Size of the surgical site
• Volume needed to cover the width and depth of site
• Patient factors that could impact safety of an amide local anesthetic
• Maximum dose should not exceed 266 mg (20 mL)
• Intended for single-dose administration only

Determine the right volume to cover the surgical site
• Consider the size of the surgical site and the neuroanatomy
• Expand the volume to disperse liposomes throughout the surgical site
• Enough multivesicular liposomes must be available at the pain receptors to continuously release bupivacaine, ensuring long-lasting analgesia
• TAP blocks require large volumes of local anesthetic to obtain reliable blockade
• For large surgical sites, the 266 mg (20 mL) vial of EXPAREL can be expanded with normal saline or lactated Ringer’s solution up to a total volume of 300 mL

Examples of expansion volumes by TAP procedure

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Incisions</th>
<th>Expanded volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open hysterectomy</td>
<td>Intraumbilical midline incision T10 to L1</td>
<td>60 mL (TAP)</td>
</tr>
<tr>
<td>Small-bowel resection with primary anastomosis, ileostomy takedown, and removal of left subfascial port</td>
<td>Laparoscopic ports</td>
<td>60 mL (20 mL infiltration; 40 mL TAP)</td>
</tr>
<tr>
<td>Open abdominal-wall reconstruction</td>
<td>25-cm inverted-T incision with resection of skin and soft tissue</td>
<td>150 mL (50 mL infiltration; 100 mL field block)</td>
</tr>
<tr>
<td>Laparoscopic sleeve gastrectomy</td>
<td>2-cm incision in right midabdomen (15-mm trocar); 1.2-cm incision 8 cm above the umbilicus in the midline (10-mm trocar for camera); 0.7-cm incisions in left upper quadrant (5-mm trocar) in subxiphoid space (liver retractor) and in left lower quadrant (5-mm trocar)</td>
<td>220 mL (~60 mL infiltration; ~160 mL TAP)</td>
</tr>
</tbody>
</table>

Example expansion volumes are based on case reports that represent the individual experience of clinicians, and are intended to demonstrate their methodology for using EXPAREL in specific soft-tissue procedures. Pacira BioSciences, 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.

Important Safety Information (continued)
EXPAREL is contraindicated in obstetrical paracervical block anesthesia.
For early analgesic coverage, administer with bupivacaine HCl

- Bupivacaine HCl may be administered immediately before EXPAREL or admixed in the same syringe.
- Keep a 1:2 ratio of the milligram dose of bupivacaine HCl to EXPAREL. In determining the ratio, consider:
  - One 20 mL vial of EXPAREL contains 266 mg of free-base bupivacaine, which is molar equivalent to 300 mg of bupivacaine HCl.
  - One 30 mL vial of 0.5% bupivacaine contains 150 mg of bupivacaine HCl.

Example of admixing

- Admixing may impact the pharmacokinetic/pharmacodynamic properties of EXPAREL; the effect is concentration dependent.

Important Safety Information (continued)

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Please refer to accompanying full Prescribing Information.
For more information, please visit www.EXPAREL.com or call 1-855-RX-EXPAREL (793-9727).
