THE USE OF EXPAREL IN ABDOMINAL 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 Indication and 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 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

### 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.

**Please refer to accompanying full Prescribing Information.**
Target the appropriate nerves to achieve the desired abdominal field block

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

Thoracoabdominal nerves:
- T7
- T8
- T9
- T10
- T11
- Subcostal nerve (T12)
- Iliohypogastric nerve (L1)
- Ilioinguinal nerve (L2)


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 transversus abdominis and internal oblique muscles.\(^7^8\)

Nerves involved:
- Dermatomes T10 to L1^4

Common applications/procedures for a classic TAP block

- Lower abdominal surgeries (incisions below the umbilicus)
  - Cesarean delivery\(^2\)
  - Colectomies\(^9\)
  - Hernia repair, including inguinal hernia\(^2\)
- Bilateral TAPs can be given for Pfannenstiel incisions or laparoscopic surgeries below the umbilicus\(^3^1^0\)

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.

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

Administration of a bilateral subcostal TAP block

In a subcostal 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.\(^5\)

Nerves involved:
- Dermatomes T6 to L1\(^4\)

Common applications/procedures for a subcostal TAP block

- Upper abdominal surgeries (incisions above the umbilicus)\(^10\)
  - Laparoscopic cholecystectomy\(^11\)
  - Nephrectomy\(^12\)
  - Colorectal\(^3\)
- Upper midline laparotomy\(^4\)
- Laparoscopic/robotic surgery\(^13\)
- Hysterectomy\(^13\)

- Can be added to a classic TAP block for coverage above and below the umbilicus\(^5\)

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

Important Safety Information (continued)

Warnings and Precautions Specific to EXPAREL

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:
- Dermatomes T6 to T12³

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

- Major abdominal surgeries (combination block anesthetizes entire abdominal wall)⁴
  - Laparoscopy³
  - Laparotomy³
  - Abdominal wall repair³
  - Colorectal³
  - Bariatric⁵

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

- Example dosing and expansion ≥20 mL per site

  **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

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.

Please refer to accompanying full Prescribing Information.
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.\textsuperscript{16}

Nerves involved:
- Dermatomes T6 to T12\textsuperscript{16}

Common applications/procedures for a rectus sheath block

- Midline incisions, including\textsuperscript{16}
  - Umbilical hernia repairs
  - Incisional hernia repairs

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

- Example dosing and expansion $\geq 20$ 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

Images used with permission from Go R et al.\textsuperscript{5}

Important Safety Information (continued)

Warnings and Precautions for Bupivacaine-Containing Products

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.5

Nerves involved:
- Dermatomes T7 to L1

Important Safety Information (continued)

Warnings and Precautions for Bupivacaine-Containing Products

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.

Please refer to accompanying full Prescribing Information.

Common applications/procedures for a QL block

- QL blocks have been used in procedures requiring more extensive abdominal-wall coverage, including3,17
  - Exploratory laparotomy, large bowel resection, ileostomy, open or laparoscopic appendectomy, cholecystectomy17
  - Cesarean delivery, total abdominal hysterectomy3,17
  - Open prostatectomy, renal transplant surgery, nephrectomy17

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

PM, psoas muscle.
Images used with permission from Go R et al.5
Performing TAP blocks in abdominal laparoscopic procedures

Administration of a laparoscopic TAP block
Laparoscopic TAP blocks are administered under direct vision, internally.¹⁸

View from the laparoscopic camera directed at the anterolateral abdominal wall¹⁸

Internal bulge reflecting visible local anesthetic infiltration into the TAP block¹⁸

- Example dosing and expansion range ≥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

Important Safety Information (continued)

Warnings and Precautions for Bupivacaine-Containing Products

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 required to cover the area
- Individual patient factors that may impact the 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
- 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 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-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 mid-abdomen (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 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.

Important Safety Information (continued)
EXPAREL is contraindicated in obstetrical paracervical block anesthesia.

Please refer to accompanying full Prescribing Information.
For early analgesic coverage, administer with bupivacaine HCl

- Bupivacaine HCl may be administered immediately before EXPAREL or admixed as part of the total expanded volume
- 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 free-base bupivacaine, which is molar equivalent to 300 mg bupivacaine HCl
  - One 30 mL vial of 0.5% bupivacaine contains 150 mg bupivacaine HCl

Example of admixing

- Admixing may impact the pharmacokinetic and/or 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).

References:
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