Steroid Injections for Musculoskeletal Disease

Montana ACP Meeting

2015

Knee
Shoulder
Ankle

Disclosure

• The authors have no conflicts of interest to disclose

Workshop Overview

• Introduction (30 minutes)
• 3 Rotating Stations (30 minutes each)
  1) Knee
  2) Shoulder
  3) Ankle
Introduction

♦ Contraindications and Risks
♦ Informed consent
♦ Injectate used: Local anesthetic and corticosteroids used
♦ Aseptic technique
♦ General aftercare

Contraindications to Injection

ABSOLUTE
• Broken skin or cellulitis over injection site, including psoriasis or eczema
• Evidence of systemic bacteremia or febrile illness
• Evidence of joint infection
• Prosthetic joint
• Hypersensitivity to local anesthetic or the steroid preservative

RELATIVE
• Major clotting disorder (correct before injection)
• Anticoagulation (consider correcting before injection of shoulder; knee and bursae, probably OK with INR below 1.8)
• Immunosuppressed (by disease or by drugs)
• Diabetic (blood sugars may rise for a few days, greater risk of infection)
Risks of joint and soft tissue injection

- Joint infection (1 in 17K-77K if done as an office procedure)
- Soft-tissue infection (1 in 10K)
- Bleeding (rare)
- Acceleration of a septic joint
- Subcutaneous fat atrophy and skin depigmentation (<1%); higher risk if injection is superficial to the skin surface or in dark-skinned individuals
- Steroid flair with pain 6-12 hours after injection (2%-5%)
- Exacerbation of diabetes (rare)
- Cartilage damage, particularly in weight-bearing joints (rare)

Risks of joint and soft tissue injection...cont.

- Tendon rupture (<1%); very uncommon if injecting the joint capsule rather than injecting around or near a specific tendon.
- Facial flushing (1%-5%)—comes on within 24-48 hours and lasts 1-2 days
- Asymptomatic pericapsular calcifications (43%)
- Allergic or hypersensitivity reactions—ask the patient about history of allergies to local anesthetics
- Anaphylactic reaction—rare, usually will begin 5-10 minutes after exposure, have the patient wait for 20-30 minutes after injection to make sure this does not occur

Informed Consent
What does the patient need to know?

- **Risks of procedure**
  - Infection, bleeding, allergic reaction, some pain
- **Benefits of procedure**
  - Relatively simple office procedure to relieve pain when conservative measures have failed
- **Realistic expectations**
  - Might not be efficacious
  - Effect may not be complete until 5-7 days
  - Usual duration of Aristospan effect is 3 months or less
Which Steroid?

Short-acting Preparations (soluble)
- Hydrocortisone (hydrocortone phosphate) 25,50 mg/ml
- Hydeltrasol (prednisolone) 20 mg/ml

Long-acting Preparations (Depot or Time-Released)
- Kenalog (triamcinolone acetonide) 40 mg/ml
- Aristospan (triamcinolone hexacetonide) 20mg/ml
- Depo-Medrol (dexamethasone acetate) 20-40-80 mg/ml

Which Steroid?

Combination Preparations (Soluble and Depot)
- Celestone Soluspan (Betamethasone) 6mg/ml

Which Steroid?

Preparation changes based on site:
- Aristospan (T. Hexacetonide) for large joints/ trochanteric bursa
- Kenalog (T. Acetonide) for medium joints
- Kenalog (T. Acetonide) for soft tissues
- Hydrocortisone for fingers
How much steroid/local anesthetic?

<table>
<thead>
<tr>
<th>Joint</th>
<th>Steroid Type/Dose</th>
<th>Steroid Type/Dose</th>
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<tbody>
<tr>
<td>Shoulder</td>
<td>2% lidocaine, Aristospan 40mg or Kenalog 40mg or 80mg</td>
<td>2cc</td>
</tr>
<tr>
<td>Knee</td>
<td>2% lidocaine, Aristospan 40mg or Kenalog 40mg or 80mg</td>
<td>2cc</td>
</tr>
<tr>
<td>Ankle</td>
<td>Kenalog 40mg</td>
<td>2cc</td>
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<tr>
<td>Bursae/Soft Tissue</td>
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<td></td>
</tr>
<tr>
<td>Shoulder</td>
<td>Kenalog 40mg</td>
<td>1cc</td>
</tr>
<tr>
<td>Subacromial Bursa</td>
<td></td>
<td>0.5 - 1cc</td>
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<tr>
<td>Bicipital Tendon</td>
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<td></td>
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<tr>
<td>AC Joint</td>
<td>Kenalog 20mg</td>
<td>1cc</td>
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<tr>
<td>Lower Extremity</td>
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</tr>
<tr>
<td>Plantar Fascia</td>
<td>Kenalog 20mg</td>
<td>1.5 - 2cc</td>
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<tr>
<td>Trochanteric Bursa</td>
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</tr>
<tr>
<td></td>
<td>Kenalog 40mg</td>
<td>1cc</td>
</tr>
</tbody>
</table>

Commonly used dosages in our injection clinic at Mayo. Other references may suggest different dosage recommendations.

Aseptic Injection Technique

► Wash and thoroughly dry hands.
► Use alcohol swab to clean the top of the vials before drawing into syringe.
► Change needles after drawing up solution into the syringe.
► Use non-sterile exam gloves—sterile gloves only necessary if you plan to re-examine the site after the skin is cleansed.
► Mark the area for injection.

Aseptic Injection Technique cont.

► Use Betadine swabs, start at the center of the marked area and swab in a circular fashion. Repeat this step at least once. Allow Betadine to dry.
► Do not touch the skin after marking and cleansing the site.
► When injecting a joint, aspirate to confirm location and to check that the fluid does not look infected.
General Aftercare

- Passive ROM after instillation
- Remind the patient that the immediate effect is the local anesthetic. The steroid effect may take a few days.
- Minimize use for 5-7 days, avoid exacerbating activities
- Do not submerge injection site in tub or whirlpool for 2 days after injection
- OK to use ice/OTC non-aspirin containing pain relievers—do not use heating pad

Call if signs of infection/allergic reaction

References


