Joint Injection for the Advanced Practice Nurse

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- Used for 60 years
- Anecdotal evidence
- Mass of Contradictory opinions
- Few randomized controlled trials
- Wide variation in technique

Evidence Base
Saunders, 2012

Joint injections show superior efficacy when compared to systemic injection of the same total dosage for rheumatoid arthritis
- Better pain control
- Increase ROM
- Improved inflammatory variables
- Overall improvement

Evidence Base
Furtado et al., 2005
Konai et al., 2009
* Few studies
* Contradictory

* Evidence Base
Saunders, 2012

*triamcinolone acetonide
*dexamethasone acetate
*methylprednisolone acetate

* Commonly used corticosteroids

* Analgesic
* Diagnostic
* Expand volume
* Joint distention

* Rationale for use of local anesthetic
**Commonly used anesthetics**

- Lidocaine HCl 1%
- Bupivicaine 0.5%

**Common Side Effects**

- Local
  - Post injection pain
  - Sub-cutaneous atrophy
  - Skin depigmentation
  - Bleeding / bruising
  - Infection
  - Steroid flare

- Systemic
  - Facial flushing (1-5%)
  - Deterioration of diabetic glycemic control
  - Uterine bleeding
* Relative safety
* Ease of application
* Cost effectiveness
* Lack of evidence for effectiveness of alternative therapies

* Benefits of Injection Therapy

* Calm demeanor
* Not in a rush
* Give control
* Explain (or not)
* Calming hand (touch)
* Hide needle
* Distraction (or not)

* Management of Response

* Management of psychosocial response
* Ethyl Chloride
* Smallest bore possible
* Virgin needle
* Perpendicular Technique

* Keys to a ‘Painless’ Injection
* lidocaine for soft tissue
* bupivacaine for joint
* Consider adding bicarb
* Saline

**Keys to a Painless injection**

* Landmark vs Image Guided

* Necessary?
* Added cost
* Improved accuracy

* Image Guided
Inflammatory
Glucose
Botox
Phenol

Prolotherapy

Euflexxa
Synvisc
Hyalgan
Orthovisc
Supartz

Viscosupplementation
Therapeutic Effects of

“This meta-analysis confirmed the therapeutic efficacy and safety of intra-articular injection of hyaluronic acid for the treatment of osteoarthritis of the knee. Additional well-designed randomized controlled trials with high methodological quality are needed to resolve the continued uncertainty about the therapeutic effects of different types of hyaluronic acid products on osteoarthritis of the knee in various clinical situations and patient populations”

JBJS, 2004

* 5 injections
* Chicken combs

* Hyalgan

* Molecular weight
* Manufactured from chicken combs
* 3 injections (2 ml each)
* Available as one injection (Synvisc One) 6 ml
* Higher rate of adverse reaction

* Synvisc
* Synthetic
* 81% satisfaction
* 3 injections
* lower rate of adverse reaction

**Euflexxa**

**Viscosupplementation for Osteoarthritis of the Knee**
A Systematic Review and Meta-analysis
Ann H. J. Rogers, MD; Peter Gunt, MD; Bruno R. da Costa, MD; Ivan Tylevich, MD; Euflexxa’s, MD; and Stephen Reichenbach, MD. *Ann Intern Med, 2012*

We conclude that the benefit of viscosupplementation on pain and function in patients with symptomatic osteoarthritis of the knee is minimal or nonexistent. Because of increased risks for serious adverse events and local adverse events, the administration of these preparations should be discouraged.

**Pre-injection counseling**

* “What does this do?”
* “I’ve heard bad things about cortisone”
* “Will this hurt?”
* skin blanching
* Activity modification
* Ice for local pain
* Facial flushing
* Steroid flare
* Return if not improved in 2 weeks
* Diabetic - watch blood sugars
  * Call if > 300 mg/dL

*Post injection Counseling*

CPT codes

* 20600 Arthrocentesis &/or injection Small (fingers/toes)
* 20605 Arthrocentesis &/or injection Medium (wrist/elbow/ankle)
* 20610 Arthrocentesis &/or injection Large (shoulder/hip/knee)

*Billing*

*EMR screen*
J3301 triamcinolone acetonide per 10mg
J1100 dexamethasone sodium phosphate per 1mg
J7323 hyaluronan or derivative, Euflexxa
J7322 hyaluronan or derivative, Synvisc

*Billing

Saunders, 2012

*https://sites.google.com/a/umich.edu/fammed-modules/joint-injection
*Save time - Google: umich.edu joint injection
*Soft tissue conditions
  * Bursitis
  * Tendonitis or tendinosis
  * Trigger points
  * Ganglion cysts
  * Neuromas
  * Entrapment syndromes
  * Fasciitis

*Indications for injection
Cardone & Tallia, 2002

*Joint conditions
  * Effusion of unknown origin or suspected infection
  * Crystalloid arthropathies
  * Synovitis
  * Inflammatory arthritis
  * Advanced osteoarthritis

*Indications for injection
Cardone & Tallia, 2002

*Local cellulitis
* Septic arthritis
* Acute fracture
* Bacteremia
* Joint prosthesis
* Achilles or patella tendinopathies
* History of allergy or anaphylaxis to injectable pharmaceuticals or constituents

*Absolute Contraindications
Cardone & Tallia, 2002
*Minimal relief after two previous corticosteroid injections
*Underlying coagulopathy
*Anticoagulation therapy
*Evidence of surrounding joint osteoporosis
*Anatomically inaccessible joints
*Uncontrolled diabetes mellitus

*Relative Contraindications

Cardone & Tallia, 2002

*Avoid injecting directly into a tendon
*Avoid injecting adjacent nerves
*Avoid direct needle injury to articular cartilage
*Sterile technique

*Precautions

Cardone & Tallia, 2002

* Alcohol wipes
* Povidone-iodine swabs
* Sterile and nonsterile gloves
* 25- to 30-gauge 0.5- to 1.0-inch needle for local skin anesthesia
* 18- to 20-gauge 1.5-inch needle for aspirations
* 22- to 25-gauge 1.0- to 1.5-inch needle for injections
* 1 mL- to 10 mL-syringe for injections
* 3 mL- to 60 mL-syringe for aspirations
* Local anesthetic
* Corticosteroid preparation
* Laboratory tubes (aspiration)
* Hemostat (aspiration)
* Bandaid

*Equipment/Supplies

Cardone & Tallia, 2002
*Rotator Cuff disease
*Full thickness tears
*Partial thickness tears
*Impingement
*Acromioclavicular arthropathy
*Glenohumeral DJD
*Biceps tendonitis

**Shoulder Conditions**

**Anatomy**

Posterior  |  Anterior
---|---

[www.nismat.org](http://www.nismat.org)
*8cc’s 1% lidocaine (10mg/ml)
*1cc triamcinolone acetonide (40mg/ml)
*1cc dexamethasone (4mg/ml)
*10cc syringe
*21g 1 ½” needle
*1cc 1% lidocaine (10mg/ml)
*0.5cc triamcinolone acetonide (40mg/ml)
*0.5cc dexamethasone (4mg/ml)
*3cc syringe
*21g 1 ½” needle
* Lateral epicondylitis
* Medial epicondylitis
* Elbow DJD / osteoarthritis

*Elbow conditions*

*Elbow anatomy*

1cc 1% lidocaine (10mg/ml)
0.5cc triamcinolone acetonide (40mg/ml)
0.5cc dexamethasone (4mg/ml)
3cc syringe
21g 1 ½” needle

* Lateral epicondylitis

Saunders, 2012
*Radial side of wrist
*Positive Finkelstein’s

*de Quervain’s

*5cc’s 1% lidocaine (10mg/ml)
*1cc dexamethasone (4mg/ml)
*10cc syringe
*21g 1 ½” needle

*Trochanteric bursitis
Meniscal tears
DJD / osteoarthritis
Gout

*Hip DJD / osteoarthritis*
*Safe and effective
*Technique important
*Develop skills over time
*Practice
*Refer if not comfortable
*Hands on session coming up

*Summary

“It’s better to give than receive”

*Injections remind me of Christmas

*Thank You


