

## Pain Management Strategies for Osteoarthritis

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## Pain Management Strategies for Osteoarthritis

- Causation is unclear but genetic factors are significant
- OA is a group of overlapping genetic and mechanically driven disorders with similar morphologic features and clinical outcomes: end result is joint failure
- Heritability estimated at 40 – 70 %, and environmental factors such as occupation and joint injury are the major aetiological contributors (e.g. farm workers have a 5 fold increased risk for hip OA)



## Pain Management Strategies for Osteoarthritis

- In 2007 Access Economics reported that there were 1.62 million Australians affected by OA
- OA is the commonest chronic disease and the second most common cause of long term disability amongst Australians (first is visual impairment)
- OA is the commonest reason for involuntary withdrawal from the workforce.
- Approx 32,000 hip replacements are performed each year in Australia

## Pain Management Strategies for Osteoarthritis

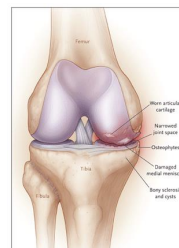
- Primary Generalized
  - Hands
  - Hips and Knees
  - Feet - Mid-feet and MTPs
  - Spondylosis - cervical, thoracic and lumbar
- Inflammatory? Is it psoriatic Arthritis?
- CPPD or gout
- Haemochromatosis
- Inflammatory vs neuropathic pain
- Co-Morbidities

## Pain Management Strategies for Osteoarthritis

### ➤ Investigations

- Low grade inflammatory response, ESR and CRP
- Iron levels - ferritin
- Plain X-rays
- CT, MRI, U/S, isotopic bone scan

## Bone marrow oedema (BMO) lesion



### Pain Management Strategies for Osteoarthritis

- Co-Morbidities
  - Obesity
  - Cardiovascular disease
  - NIDDM
  - Neurological problems in lower extremities
  - Osteoporosis
  - Surgical risk
- Functional Disability

### Pain Management Strategies for Osteoarthritis

- Treatment
  - Generalized
    - Acetoaminophen
    - NSAIDs
    - Narcotics
    - Glucosamine + Chondroitin Sulphate
    - Strontium Ranelate
    - Anti-neuropathic agents - pregabalin (lyrica) and tapentadol (Palexia SR)

### Pain Management Strategies for Osteoarthritis

- Treatment
  - Generalised
  - Weight loss
  - Physiotherapy and Exercise
  - Occupational therapy and functional aides
  - Splints
  - Treat depression
  - Surgery

### Pain Management Strategies for Osteoarthritis

- Treatment
  - Acetoaminophen
    - The benefit of acetaminophen in osteoarthritis is marginal at best recent trials suggest an effect size of just over 0.1 which is statistically significant but not clinically useful
    - There is also increasing concern re toxicity
    - One study has demonstrated a small effect on BP
    - A large cohort study demonstrated an increased rate of myocardial infarction and stroke (1)
    - Liver toxicity in 23% of patients receiving 2 G or more daily.
    - Acetoaminophen causes Gut mucosal damage similarly to Ibuprofen in one study
    - Acetoaminophen 4 G daily increases the anticoagulant effect of warfarin.

1. Myocardial Infarction and stroke: NSAIDs, Acetoaminophen and the risk of CV events. *Circulation* 2006;113:1578-87

### Pain Management Strategies for Osteoarthritis

- Treatment
  - NSAIDs
    - COXIBs increase the rate of cardiovascular events by about 30% (RR 1.37) (2)
    - Absolute increase of 3 events per 1000, 1 of which is fatal.
    - Naproxen no increase in the rate of CV events - RR 0.93 (0.67-1.27)
    - Upper GI complications with COXIBs - RR 1.81 (1.2-2.0)
    - Reduce CV events by co-prescribing concomitant aspirin.
    - Reduce GI events by co-prescription of a PPI.

2. Vascular and Upper GI effects of NSAIDs - metaanalysis of individual participant data from randomised trials. *Lancet* 2013, Aug 31; 382 (9894) : 769-779

### Pain Management Strategies for Osteoarthritis

- Treatment
  - Narcotics
    - Codeine, tramadol, buprenorphine (norspan), fentanyl (durogesic), targin (oxycodone + naloxone), hydromorphone HCL (Jurnista)
    - May help chronic back and neck pain, OA Hip? And Knee?
    - Use lowest effective dose
    - Beware of coprescription with other sedating drugs
    - Aware of side-effects – respiratory depression, somnolence and sedation, nausea and vomiting and constipation, dependence.
    - Contract with patient

### Pain Management Strategies for Osteoarthritis

- Treatment
    - Glucosamine and Chondroitin Sulphate (3)
      - Controversy as to the effectiveness of the preparations
      - Glucosamine sulphate (GS) effective with an effect size of about 0.30 or more in the studies for pain relief and structure modification.
      - 1500 mg daily as a single daily dose.
      - Glucosamine HCL ineffective in a large NIH sponsored study.
      - Chondroitin Sulphate (CS) effective with effect size of 0.3
      - Variable recommendations from International Rheumatological societies.
3. *Commentary on recent therapeutic guidelines for osteoarthritis. Seminars in Arthritis and Rheumatism 2015 (44):611-617.*

### Pain Management Strategies for Osteoarthritis

- Treatment
    - Strontium Ranelate
      - Demonstration of efficacy in OA knee and lumbar spondylosis
      - 2 g daily of strontium ranelate produced a significant reduction on pain and stiffness scores with an improvement in function scores (4)
      - Post-hoc analysis demonstrated an improvement in lumbar spine pain scores (5)
      - Questions as to cardiovascular safety and VTE's in patients treated with strontium ranelate
4. *Clinically meaningful effect of Strontium Ranelate on symptoms in knee OA. Rheumatology (2014) ; 53 (8):1457-64*  
 5. *Effects of strontium ranelate on spinal OA progression. Ann Rheum Dis 2008;67:335-9.*

### Pain Management Strategies for Osteoarthritis

- Treatment
  - Treatment of neuropathic pain
    - Pregabalin dose of 75 mg bd increasing to 300 mg bd depending upon response and tolerance.
    - Tapendalol - 50 mg bd increasing to 250 mg bd

### Pain Management Strategies for Osteoarthritis

- Treatment
  - Local
    - Intra-articular corticosteroid - large and small joints - facet joints
    - Rhizotomies
    - High MW Hyaluronan

### Pain Management Strategies for Osteoarthritis

- Treatment
  - Local
    - High MW Hyaluronan (3)
      - High MW Hyaluronic Acid (Synvisc 1)
      - Benefit also somewhat controversial , current consensus that this is effective in some patients.
      - National societies also variable in their recommendations
      - Earlier disease
      - OA knee
      - Can be repeated every 3-6 months
      - Expensive \$ 300-\$ 500/per injection

### Pain Management Strategies for Osteoarthritis

- Specific treatment for joint location
  - Base of thumb pain
  - PIP's, DIP's
  - Elbow's (occupational)
  - Shoulders
  - Hips and Knees
  - Mid-feet and MTP's
  - Cervical Spine
  - Lumbar Spine

## Pain Management Strategies for Osteoarthritis

### ➤ Future Therapies

- Regenerative strategies
  - autologous chondrocytes (ACI)
  - stem cells - no current evidence as to effectiveness
- Chondrocyte Stimulators

## Pain Management Strategies for Osteoarthritis

### ➤ Take Home Messages

- Is the diagnosis correct?
- Is there joint inflammation – what is the reason? - How will I treat it?
- What are the co-morbidities - how do they impact on my treatment of the patient's arthritis?
- How do I balance treatment of the patient's co-morbidities and treatment of the patient's arthritis?
- How do I keep the patient functional?
- Can they remain independent in their own home?
- Can I keep them at work?

## Pain Management Strategies for Osteoarthritis

### ➤ Take Home Messages

- **TREATMENT**
- What local joint treatments are available?
- What pain relief does the patient require?
- Do they need an oral NSAID? – What are the risks? – How long do they need it for?
- Do they need a more potent analgesic – what are the risks?
- Is there neuropathic pain? Is there fibromyalgia?
- Can I use glucosamine sulphate or strontium?

## Pain Management Strategies for Osteoarthritis

THANK YOU

QUESTIONS?

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