



OSTEOARTHRITIS

Top tips for MURs

- Check that patient understands that there is no cure for osteoarthritis and manage patient expectations
- Advise patient that aim of treatment is to reduce pain and optimise mobility
- Counsel patient on purpose of each medication
- Advise patients that paracetamol should be part the analgesic regime of every patient (unless contra-indicated), as it reduces the need for further more toxic analgesics
- Counsel patient on the use of balanced analgesia, where a combination of different classes of analgesics are used simultaneously according to the pain, to maintain consistent pain control
- Counsel patient on signs / symptoms of complications that need referral (see red flags overleaf) and on common side effects (see side effects overleaf)
- Counsel patient on the need to take pain medication regularly (or in anticipation) rather than when pain reoccurs
- Counsel patients receiving intra-articular corticosteroid injection to rest the injected joint for 24 hours following the injection as this increases the efficacy of the injection
- Signpost patients with chronic pain to self-help leaflets and websites e.g. Arthritis care or Expert Patients programme
- Advise patients on non-pharmacological interventions to manage pain e.g. weight management, physiotherapy, exercise, TENS machines
- Report any relevant adverse drug reactions to the Yellow Card Scheme

Pathophysiology of osteoarthritis

Osteoarthritis is the most common chronic arthritic disorder. Osteoarthritis is defined as a disorder of synovial joints, that is characterized by focal areas of damage to the articular cartilage; remodelling of underlying bone and the formation of osteophytes — new bone at joint margins and mild synovitis¹. It is a complex disease involving both cartilage and bone which is predominantly a non-inflammatory abnormality of the synovial joints, it is characterised by loss of articular cartilage and an accompanying bone overgrowth. Symptoms include joint pain, stiffness, limitation of movement and swelling as well as creaking and cracking (crepitus) in the joints related to movement, as the disorder progresses². Swelling of osteoarthritic joints may be caused by synovitis with effusion or osteophyte formation at the joint margins. Specific aetiological factors are unknown, but genetic, patient-specific and environmental risk factors have been implicated in its development².

Lifestyle issues

- Counsel patient on reducing alcohol intake to within safe limits (up to 14 units a week, spread evenly over 3 more days, with several alcohol free days)
- Counsel patient on healthy eating & weight loss (if BMI > 25kg/m²) - reduce saturated fat and salt intake, increase oily fish intake, reduce caffeine intake to no more than 5 cups a day and recommend 5 portions of fruit / vegetables a day.
- Advise patients who smoke of the benefits of stopping smoking and refer to Stop Smoking Wales or Pharmacy Stop Smoking services if willing to stop
- Advise patient that excess weight compounds the problem by putting extra strain on damaged joints and discuss the benefits of exercise in protecting joints by keeping the surrounding muscles strong. Suggest 20-30 minutes of exercise a day (signpost to local exercise schemes – details on LHB website)

How do medications to treat osteoarthritis work?

Paracetamol	Proposed mechanisms of action include effects on central prostaglandin inhibition, peripheral bradykinins and serotonergic systems leading to an analgesic effect.
NSAIDs	NSAIDs inhibit the enzyme cyclo-oxygenase (COX), which catalyses the conversion of arachidonic acid to prostaglandins and leukotrienes. This results in reduction of inflammation, reduced temperature and an analgesic effect.
Codeine	Codeine mimics the action of the naturally occurring pain reducing chemicals called endorphins. It combines with the mu opioid receptors in the brain and spinal cord to block the transmission of pain.
Intra-articular corticosteroid injection	Used to reduce joint inflammation (synovitis) and relieve pain on a temporary basis.
Capsaicin	Reduces pain by defunctionalisation of nociceptor fibres and reduction of Substance P.
Glucosamine and chondroitin	Mode of action is not fully understood but it is thought that glucosamine and chondroitin stimulate cartilage production and inhibit degradation. Not recommended for use.
Tramadol	Centrally acting opioid receptor agonist that also inhibits re-uptake of noradrenaline and serotonin. Possible adjunct in patients who are inadequately controlled on NSAIDs and paracetamol.
Hyaluronic acid injections	Hyaluronic acid is the major component both of synovial fluid and the surface layer of the articular cartilage and acts as a cushion and lubricant in the joints. Prolonged duration of action of up to six months. Not recommended for use.





Red flags that need referral

- Red, warm joint with acute restriction of range of movement with or without fever
- Any signs of anxiety and depression
- Any symptoms suggestive of gastrointestinal bleeding (anaemia, black stools or dark, coffee ground vomiting)
- Any cardiovascular symptoms (bradycardia, tachycardia, palpitations, postural hypotension)
- Any symptoms of liver damage (nausea, vomiting, abdominal pain and jaundice)
- Any signs of respiratory depression or changes in sleep pattern including snoring, vivid dreams, nightmares
- Worsening of pain symptoms in spite of increasing medication doses – especially with opioids

What are the common side effects to look out for?

Drug	Common side effects	Recommendation
Oral NSAIDs	Gastro-intestinal events	Refer to prescriber - NICE guidelines recommend co-prescribing of a proton pump inhibitor.
Topical NSAIDs	Rash and risk of photosensitivity reactions with topical ketoprofen	Refer to prescriber if not tolerated and advise patients using ketoprofen to avoid exposing the area treated to sunbeds or sunlight (even on a bright but cloudy day) during and for two weeks after stopping treatment.
Codeine (should be prescribed separately to paracetamol)	Gastro-intestinal events including constipation	If regular use of codeine is needed, suggest a laxative as a preventative measure.
	CNS toxicity e.g. drowsiness	Warn patient to avoid activities (eg. driving) where drowsiness may be detrimental.
Capsaicin cream	Burning sensation, skin irritation	Advise patients that this will diminish over time. Advise patients to avoid application to broken skin and contact with eyes. Refer to prescriber if not tolerated.
Tramadol	Nausea, constipation, diarrhoea, dizziness, headache, drowsiness and vomiting	Refer to prescriber if not tolerated.
Glucosamine and chondroitin	Nausea, abdominal pain, dyspepsia, flatulence, diarrhoea, constipation, drowsiness, headache, fatigue	Not normally prescribed but many patients take OTC. Recommend to stop treatment if not tolerated. Contraindicated in shellfish allergy.
Hyaluronic acid injections	Inflammation and pain at injection site	Not recommended for use and associated with short-term increase in knee inflammation.

See MUR quick guides for NSAIDs and Opioids for full details of side effects

Potential serious drug interactions?

Drugs used to treat osteoarthritis can interact with many other medications - see BNF Appendix 1: Interaction for more details.

- NSAIDs can interact with aspirin, some antidepressants and anticoagulants (↑ *risk of bleeding*); antibacterials, antivirals, antidiabetics, diuretics & ciclosporin (↑ *risk of nephrotoxicity*); lithium (↑ *risk of lithium toxicity*) and methotrexate (↑ *risk of methotrexate toxicity*). Methotrexate is used commonly with NSAIDs, but NSAIDs should be prescribed and blood levels monitored.
- Opioid analgesics can interact with dopaminergics, memantine, cimetidine, alcohol, antipsychotics (↑ *risk of convulsions with tramadol*), anxiolytics and hypnotics, antivirals, antifungals, antidepressants, anticonvulsants (plasma concentrations altered see BNF), anticoagulants (tramadol enhances anticoagulant effect) and MAOIs
- Glucosamine can interact with warfarin (↑ *anticoagulant effect*)

Where can you find more information?

- Musculoskeletal and joint diseases – BNF sub-section 10.1.1
- NICE clinical guideline CG177 Osteoarthritis: The care and management of osteoarthritis in adults guidance can be found on NICE website www.nice.org.uk
- Arthritis Care which can be found at www.arthritiscare.org.uk
- NICE Clinical Knowledge Summary can be found at <http://cks.nice.org.uk/>

References

1. Osteoarthritis: The care and management of osteoarthritis in adults (CG177), National Institute for Health and Care Excellence, 2014
2. Musculoskeletal disorders – advancing your practice level 2, CPPE, distance learning pack