How best to review medicines used for the control of pain

Chronic pain is common in the community, affecting up to half of the population,[1] with a wide-ranging impact on general physical, psychological and social health, and on ability to work.[2]

Chronic pain is a multi-dimensional problem, requiring holistic management, which includes medicines and non-drug options. The majority of people with chronic pain use analgesics regularly.[3] Thus, ensuring the safe and appropriate use of medication is an important part of the management of chronic pain, although not the only part.

Clinical experience and previous research suggests that analgesics are often prescribed sub-optimally,[4] repeat prescriptions are often monitored imperfectly,[5] and concomitant use of over-the-counter analgesia often occurs without reference to prescribed medicines including analgesics.[6–8] These problems may lead to inefficient treatment of the pain, as well as increasing the risk of side-effects.

Pharmacists are ideally placed to identify and address medicines-related problems in the management of chronic pain. Thus, they might review prescribed and over-the-counter medication of patients with chronic pain, exploring compliance and concordance, and advising them and their GPs of changes in dosage or treatments that might be more appropriate or beneficial. They might also highlight interactions between any prescribed or purchased medications, contributing to safer prescribing.

Aim of treatment

It is important when starting a patient on a new medicine or reviewing a repeat medicine to have a clear idea of the intended outcome. Desired patient outcomes include:

1. To control or reduce pain to a level that is acceptable to the patient
2. To improve quality of life, such as by improving mobility.

To achieve these aims:

1. Pain intensity should be measured regularly using a pain scale.
2. The patient or family should be provided with information about pain and pain relief options.

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Patients will be reassessed for any:

a. unrelieved pain
b. new pain
c. procedures expected to cause pain.

General principles of pain management

When managing pain the following general principles need to be applied:-

Diagnosis: adequate assessment and accurate diagnosis of cause of acute or chronic pain is essential for specific options to be pursued.

Acute on chronic pain: acute pain may arise on a background of chronic pain — for example, acute pain resulting from superimposition of osteoporotic vertebral collapse or nerve entrapment upon other pre-existing conditions. The pain management strategy as appropriate for an acute episode is advised.

Progressive conditions in a proportion of underlying disease will be expected to deteriorate. This applies to both malignant and non-malignant conditions, and the pain, management strategy will require continual adjustment. Psychological factors may contribute to pain severity and should be managed. Non drug interventions should be considered, such as weight loss, exercise or transepithelial nerve stimulation (TENS). Pharmacological interventions should be increased to full therapeutic or tolerated doses before switching to another agent.

Patient requirements: all strategies should be individualised to specific patient needs and tolerance. For example, conventional, immediate-release opioids require four-to-six hourly dosing. This can result in interruption in sleep and inconvenience to the patient leading to reduced adherence.[9,10] Particular formulations may meet individual patient needs and circumvent this problem, such as skin patch. Tramadol is available in a prolonged release preparation with once- and twice-daily dosing regimens; this is also the case for modified release non-steroidal antiinflammatory drugs (NSAIDs). These would be options to consider for early morning pain or stiffness, but are expensive compared to more frequent dose preparations.

Other oral opioids include morphine and oxycodone. Both are available as prolonged release preparations allowing once- or twice-daily dosing with morphine and twice-daily dosing with oxycodone. They have evidence to support their use in chronic non-cancer pain, including osteoarthritis.[11] The

Box 1. General considerations to make during a medicine review of pain medicines

1 Switching of products, where appropriate, for example soluble paracetamol to caplets to reduce sodium intake.
2 Addition of dosage instructions, where appropriate, so people are clear about the indication and the amount to be taken.
3 Identification of and removal of duplicated medication, especially duplicate NSAIDs.
4 Removal of unnecessary medication not used in the last six months.
5 Identification of monitoring need, such as blood pressure or blood tests.
6 Dose step-downs — for example from Co-codamol 20mg/500mg to 10mg/500mg).
7 Medication changes needed as advised by recent hospital discharge or outpatient letters.

higher strengths and potencies used increased the risk of side-effects.

Combination analgesics: individual patient treatment strategies should be titrated independently. Fixed dose combinations have a limited role — although they may allow patients to reduce the quantity of tablets taken. If they are used, therapeutic doses should be given, such as codeine 30mg with paracetamol 500mg per tablet.

Supporting evidence for prescribing decisions can be found in resources such as the *British National Formulary*, *Clinical Knowledge Summaries*, The National Prescribing Centre and The National Institute of Health and Clinical Excellence.

Pain management strategy

Oral analgesic drugs are usually the first-line treatment for pain. The choice of analgesic should be based on the severity of pain rather than the stage of the patient's disease. Analgesics should be taken regularly and the dose gradually increased, as necessary.

Step one

For acute pain, either as a self-limiting episode or upon a background of chronic pain, such as soft tissue injury, post-operative pain, osteoarthritis, low back pain or dysmenorrhoea the following sequence of pain relieving medication should be given:

First — give paracetamol.
Second — substitute with ibuprofen.
Third — add paracetamol to ibuprofen.
Fourth — continue paracetamol and replace ibuprofen with an alternative NSAID. If NSAID is contraindicated or not recommended, substitute with a low potency opioid, such as codeine.[12]

Step two

If the pain is persisting or worsening despite following step one then a mild opioid, such as codeine, should be added (not substituted). Examples of combination preparations include co-codamol.

Step three

When higher doses of opioid are necessary, the third step is used. At this step, for moderate-to-severe pain, higher dose opioids are substituted, such as morphine. The dose of stronger opioid can then be titrated upwards, according to the patient's pain.

Medications for persistent pain should be prescribed on a regular basis and patients should always have extra medication available to take in between doses if they experience break-through pain. Remember prophylactic laxatives may need to be added to the repeat prescription.

General medicines considerations

There are specific issues for pain medicines that should be considered at the review.[13] Some of these are 'value for money' interventions, others are 'good house-keeping' and some are clinical. These are illustrated in Box 1.

Medications for persistent pain should be prescribed on a regular basis and patients should always have extra medication available to take in between doses if they experience break-through pain.

Pharmacological management

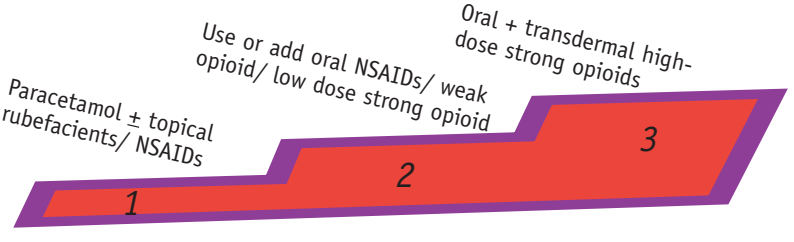
Pharmacological interventions should be seen as an adjunct to non-pharmacological management. In particular patients should be helped to reduce weight if this is a problem. What the patient actually takes (including self-medication) rather than what is prescribed should be evaluated (including drug, dose regimen, compliance and side-effects). Pain measurement scales are available to help evaluate pain levels (see Box 2). A stepwise approach to pain management is recommended as follows, using osteoarthritis (OA) as an example:

Step one[12]

Paracetamol is safe and effective and should be the first choice for OA pain management. Up to 4g/day can be taken. Paracetamol should be taken for at least 4–6 weeks before considering stronger analgesia and is the preferred long-term analgesic.

If paracetamol does not provide sufficient pain relief, topical preparations such as rubefacients (such as capsaicin) or NSAIDs (gels, creams, foams) can be administered with or without paracetamol. Massage with topical preparations can provide symptomatic relief and should be encouraged. Topical NSAIDs have been shown to provide equivalent pain relief to

Stepwise pharmacological pain management



Box 2. Pain record chart for patients to assess their pain

A pain scale is useful to describe how much pain you are feeling. The scale can be used to assess the response to a medicine or other type of pain relief, such as acupuncture. This will be helpful for you and your doctor, pharmacist or nurse to make changes to your treatment.

Pain scale:

0	1	2	3	4	5	6	7	8	9	10
No pain										Worst pain

Completing the pain reporting form

You can record your pain once a day or more often if you feel this would be helpful. If you make more than one record per day, then write the date and time. Pain is not usually constant so you may want to record a number for how it is most of the time and how it is at its best and worst.

Pain may be caused by a certain activity. You may want to make a note of what worsens your pain. Record your current pain relief medicines and any other treatments you use to relieve pain, such as hot water bottle, acupuncture or massage. Use the pain scale to rate your pain before and after you take the medicine.

Pain reporting form:

Pain scale rating			Description of usual pain	What causes worst pain?	Current medicines and doses	Other methods that relieve pain
Usual	best	worst				

Box 2. An example of a pain measurement scale that is used to help patients evaluate their pain.

oral NSAIDs, with significantly reduced systemic adverse events.[14]

Step two

If paracetamol and/or topical preparations do not provide sufficient pain relief, the following pharmacological therapies can be used or added:

Oral NSAIDs: These can be used to reduce pain and improve function, but are associated with gastrointestinal (GI) toxicity. Use NSAIDs with caution both in the elderly and at-risk groups in whom side-effects can be more common and severe. Consider renal function, risk of precipitating heart failure, cardiovascular (CV) risk and GI-bleed risk. In someone with a history of chronic or allergic skin conditions, a standard NSAID may be preferred to a cyclooxygenase inhibitor (coxib), because coxibs have rarely been reported to be associated with an increase of these risks. However, consider intermittent use of the NSAID and gastroprotection with a proton pump inhibitor. Ask also whether the patient is taking other GI irritants such as aspirin or oral steroids. Doses should be staggered to minimise any interaction (such as giving ibuprofen at least 30 minutes after and 8 hours before aspirin). Consider whether the patient taking is an selective serotonin reuptake inhibitor (SSRI). There is an increased risk of bleeding with NSAID use. Other questions to consider include the following:

- Is the SSRI still necessary?
- Is the patient taking Ciclosporin? There is an increased risk of nephrotoxicity, serum potassium levels need monitoring
- Is the patient taking methotrexate? Excretion is reduced (giving rise to an increased risk of toxicity)
- Is the patient taking warfarin either from the practice or the hospital?

Prescribing should be based on the safety profiles of individual NSAIDs and on individual patient risk factors. Medication reviews of NSAIDs should consider:[15]

- Is an NSAID still necessary?
- Is the NSAID prescribed appropriate, based on the patient's CV risk?
- Does the NSAID prescribed have a relatively high GI bleed risk? Can a safer one, such as ibuprofen be prescribed?
- Should a PPI be co-prescribed to reduce the risk of GI effects?
- When should treatment/dose next be reviewed?

Although coxibs are associated with a lower risk of GI side-effects and should only be used in preference to standard NSAIDs in patients that are at a particularly high risk of developing a gastroduodenal ulcer, perforation or bleeding, there is no good evidence to support the use of coxibs alone ahead of traditional NSAIDs co-prescribed with a PPI. Coxibs also have a higher CV risk than ibuprofen <1200mg per day or naproxen 1000mg per day.

Diclofenac 150mg/day appears to be associated with a similar excess risk to that of coxibs.[16] When reviewing patients already receiving diclofenac, some patients, after discussion, may decide to continue treatment with diclofenac. However, in some cases (especially patients with significant risk factors for CV disease) it may be appropriate to consider alternatives.

Weak Opioids: Codeine or dihydrocodeine, are suitable for mild-to-moderate pain relief.

- Codeine recommended dose <240mg per day
- Dihydrocodeine recommended dose: 30-60mg every 4–6 hours.

Low dose tramadol has fewer of the typical opioid side-effects (such as, less respiratory depression, constipation and addiction potential) and may behave as a strong or weak opioid depending on the dose. You should remember that NSAID/paracetamol and weak opioid/paracetamol combinations are available, and these may improve patient compliance. However, with compound preparations there is difficulty in titrating individual drug doses.

Co-prescribing of laxatives should be considered in all patients taking long-term opioids, especially the elderly who are generally immobile and have a poor diet.

Low dose strong opioid: Buprenorphine 7–day transdermal patch should be started at the lowest dose and patients should continue taking short-acting supplemental analgesics during titration as required. Patients should be carefully and regularly monitored to assess the optimum dose and duration of treatment. It is recommended that an anti-emetic is prescribed for the first 7–10 days after application of the first patch.

Step three

If the therapies discussed above are ineffective, oral and transdermal high-dose strong opioids can be used.

Non-pharmacological management

After diagnosis it is important to discuss the patient's feelings and expectations regarding the disease and its management. These are issues which cannot easily be found in the patient's records. Considerations that could help you to better understand the patient and their needs include:

- Does the patient manage their condition to minimise pain and maximise mobility? You may need to suggest referring to allied professionals, such as physiotherapists, occupational therapists.
- Inform the patient about the disease and what to expect.
- Has written information been provided and direction to self-help websites/ organisations?
- Does the patient understand the benefits' of exercise? These include building up muscle strength around the joint, maintenance of joint movement.
- Has the patient been advised to lose weight if obese?
- Has the patient been advised to break up activities of daily living by gradually introducing exposure to feared tasks and activities, such as return to work.
- Is the patient aware of appliances to protect the joint, walking sticks, supportive footwear and the use of a Tubigrip bandage?

Conclusion — the golden rules

Regular review of medication and patient compliance is recommended. Reassess every 3–6 months to ensure ongoing pain management. The following should be considered when prescribing analgesics: (1) slow release formulations (2) alternatives to NSAIDs and (3) cost-effectiveness.

Declaration of competing interests

The author declares that she has no competing interests.

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Correction

An error crept into the *Basic pharmacy skills* article in last month's *Pharmacy in Practice* **18(2):** p58, under the section headed 'Identification of ADRs'. Here, 'An example being drug-induced hyperkalaemia, caused by drugs such as spironolactone, ACE inhibitors or nebulised beta-agonists' *should* have read: 'An example being drug-induced hyperkalaemia, caused by drugs such as spironolactone or ACE inhibitors.'

The author and editors apologise for this oversight.