

PJ PRACTICE CHECKLIST

OTC ORAL ANALGESICS

There are numerous OTC oral analgesics on the market. This card outlines points to consider when counter prescribing these minor analgesics and looks at the comparative efficacy of the different compounds available

HOW POPULAR ARE MINOR ANALGESICS?

Minor analgesics are among the most widely used over-the-counter remedies. Indeed, non-prescription analgesic sales, worth about £1bn in Europe, account for some 20 per cent of the OTC medicines market. In the UK alone, there are over 100 brands of analgesic products and most community pharmacists respond to several requests for advice about analgesics each working day. Despite the obvious importance of OTC analgesics, reliable advice about the comparative value of the various products is hard to come by. There are several reasons for this: our poor understanding of pain and the human response to it; the difficulty in conducting high quality clinical trials on many common painful conditions, such as headache; and the substantial amount of money put behind the promotion of analgesic products making it difficult to discern objective information from the mass of advertising material.

HOW IS PAIN PERCEIVED?

The pain experience provides us with a means by which we are alerted to injury or disease. Injury is usually accompanied by pain and, generally, the more serious the injury, the more severe the pain. What is puzzling, however, is the wide range of pain thresholds seen in different individuals and how markedly pain can be modulated by an individual without pharmacological intervention. In many cases, pain is perceived without any obvious signs of injury, such as in most cases of headache.

Indeed, in some cases, pain is experienced many years after the injury has healed, such as phantom limb pain, long after an amputation.

We now know that the severity of pain perceived in response to any given stimulus is modulated by previous experience, cultural determinants, one's own assessment of the meaning of the pain and the feeling of control which the subject has over the pain. In the last instance, the mere fact that a potentially useful remedy is available may provide pain relief.

HOW IS PAIN DESCRIBED?

Pain is often described as acute or chronic. Acute pain may be transient and of no consequence, as is often the case with most minor injuries. In some cases, the acute pain may be more persistent, as seen with common sore throats, an abscess or a sprained ankle. The expectation is that with treatment directed at the cause, rest or short-term use of analgesics, the pain will disappear. Chronic pain, on the other hand, is often intractable and continued use of analgesics are required to keep pain under control. To assess pain, careful attention to the words that are used by the patient to describe the sensory and affective properties of the pain is important. How the patient evaluates the overall intensity of the pain should also be given careful consideration. Menstrual pain, for example, is often described as constant, cramping and aching (sensory) and tiring and sickening (affective). Toothache, on the other hand, is often described as constant or

rhythmic, throbbing, boring and sharp (sensory), sickening (affective) and annoying (evaluative).

WHAT IS THE PLACEBO RESPONSE?

The powerful influence which individual factors play in modulating pain is further evidenced by the many surprising results reported in studies evaluating the placebo response. For example, up to one third of subjects with severe post-surgical pain report marked pain relief after receiving a placebo. The placebo response is particularly marked when the pain is associated with pronounced anxiety. Headache also appears to be particularly susceptible to the placebo response.

WHICH ANALGESICS ARE AVAILABLE FOR OTC SALE?

Surprisingly, despite the large number of different analgesic products, choice of a simple OTC analgesic compound is limited to only three compounds for adults (aspirin, ibuprofen and paracetamol) and two for children (paracetamol and ibuprofen).

The association of aspirin with Reye's syndrome (a potentially fatal neurological condition in children) has led to restriction of the use of aspirin to adults and children aged 12 years and over. Aspirin and ibuprofen are non-steroidal anti-inflammatory drugs (NSAIDs). Paracetamol is ineffective against inflammation. Because aspirin and ibuprofen share much the same mode of

action, when recommending a minor analgesic the choice of primary ingredient rests on aspirin or ibuprofen as one alternative (the NSAID alternative) and paracetamol as the other. For pyrexia, all three are equally effective.

WHICH DRUG IS MOST EFFECTIVE?

Outcomes used in randomised clinical trials to assess analgesic effect include pain intensity, pain relief scores and patients' assessment of the quality of pain relief. All three analgesic compounds are effective, irrespective of the outcome measured, in many pain models. Few of the studies have compared the three compounds directly and on the whole the data suggest no marked differences in efficacy.

NSAID OR PARACETAMOL?

For managing pain associated with inflammation, it is clear that an NSAID is preferable. Based on its better safety profile, ibuprofen would be the best choice, although both aspirin and ibuprofen are safe and effective when used at the recommended doses.

Paracetamol is the only choice in the presence of a history of hypersensitivity to aspirin or an NSAID and in patients with a history of active peptic ulceration. Haemophiliacs should not be given aspirin. Patients receiving oral anticoagulants, methotrexate or thiazides are also best treated with paracetamol if an analgesic is required, in order to avoid dosage adjustments.



Ibuprofen may alter lithium pharmacokinetics and hence, ideally, the two drugs should not be used together. Both aspirin and ibuprofen should be avoided during pregnancy, particularly during the third trimester because of possible bleeding with aspirin and prolongation of pregnancy with both drugs.

Paracetamol is commonly abused by depressed individuals for attempting suicide. For this reason, a combination product containing paracetamol and methionine is available. It can be argued that, ideally, patients receiving antidepressant compounds should not be given paracetamol.

WHICH NSAID?

At recommended doses, both aspirin and ibuprofen are effective for most of the painful conditions treated on a self-medication basis. These include headache, musculoskeletal pain, dysmenorrhoea and post-surgical pain. The choice between the two agents lies in their relative safety and side effects. In overdose, there is little doubt that ibuprofen is much safer than aspirin. Both are associated with gastrointestinal adverse effects but ibuprofen is the milder agent in this respect and is generally regarded as the safest of the NSAIDs in clinical use. Perhaps as many as one in 20 asthmatics may be hypersensitive to aspirin and there is some degree of cross-reactivity with ibuprofen. Aspirin also has marked anti-platelet activity, which persists for several days. While ibuprofen exerts some anti-platelet effect, it only lasts for a few hours. None the less, patients on oral anticoagulants should ideally avoid both analgesics, although any potential problem is likely to be more pronounced with aspirin.

HOW EFFECTIVE ARE COMBINATION PRODUCTS?

While it has become common practice to regard combination products containing

one of the three analgesic compounds together with either caffeine or codeine as "strong analgesics", there is little evidence to support such claims. Two recent meta-analyses have shown that, while codeine may enhance analgesic efficacy, this is only seen at doses of codeine several times higher than those present in OTC formulations. More importantly, even at higher doses, additive effects seen with the combination products on the basis of pain scores are not translated into an increased number of patients obtaining at least moderate pain relief. (Pain scoring involves asking patients to score the intensity of their pain at various intervals; a major difficulty with this system is assessing the clinical significance of an observed reduction in pain score.)

Both caffeine and codeine may add to the side effect profile of the analgesic products.

IS THERE A PLACE FOR COMBINATION PRODUCTS?

Given that there is so little evidence to support the claims that combination analgesic products are more effective than the simple analgesics, some critics would contend that there is no place for them as OTC remedies. This is a rather harsh view. There is no doubt that some patients do derive benefit from combination products when a simple analgesic has failed. The evidence suggests that this is because of an enhanced placebo response, rather than because of any inherent additive analgesic effect.

At OTC doses, adverse effects of the additives are rare and generally not severe. Therefore, provided the limitations are recognised and the products are regarded as second-line agents rather than first-line agents, combination products still have a place. However, a change of brand or presentation of an analgesic may well produce an additional benefit of a similar magnitude.

PRACTICE POINTS

Patients who seek advice on analgesics tend to have already tried some medication without success and require help or reassurance. Application of the mnemonic **ENCORE** may help to avoid overlooking important points:

Evaluate the symptom, its onset, recurrence and duration

No medication is always an option

Care when dealing with specific patient groups, notably the elderly, the young, nursing mothers, pregnant women, those receiving specific medication, such as methotrexate and anticoagulants, and those with particular disease, eg, renal impairment

Observe the patient for signs of systemic disturbance and ask about presence of fever, loss of weight and any accompanying physiological disturbance

Refer when in doubt

Explain any course of action recommended. This will lead to reassurance and improved compliance. Reassurance itself may lead to pain relief

WHEN TO REFER

The following groups of patients should be referred:

- Any patient reporting pain of a severity substantially higher than previously experienced
- Any patient with evidence of significant systemic disturbance, such as sweating and fever
- Young children, particularly those who have not responded to previous doses of analgesics given by the parents
- Patients with pain which has increased in severity over a period of days for no obvious reason
- Patients with neck pain developing after an accident
- Any patient who is particularly anxious and not responding to reassurance
- Any patient who appears to be abusing analgesics

This card has been written by Professor Alain Li Wan Po (school of pharmacy, University of Nottingham)

This card is produced by The Pharmaceutical Journal in collaboration with the Centre for Pharmacy Postgraduate Education at Manchester university

THE
PHARMACEUTICAL
JOURNAL

Centre for Pharmacy
Postgraduate
Education

