Medicine for Managers

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Pain and its Management

Since the time of the ancient Greeks pain has been the subject of much investigation with theories for the cause varying from an imbalance of vital fluids (suggested by Hippocrates) to a punishment from God. Descartes first postulated nerve fibres carrying pain stimuli in the mid-17th Century but it was not fully recognised as a sensory modality until the 1900s.

It is now clear that pain is carried along nerves from receptors (nociceptors and others) at a varying speed, depending on the thickness and insulation of the nerves, to the brain. Pain can vary in intensity. The threshold for feeling pain of any given type and location is associated with the degree of tolerance of the sufferer, together with ethnic origin, genetic predisposition and sex.

The word **'Pain'** is derived from the French word **'peine'** which is in turn derived from the Latin word **'poena'** which means the price paid, penalty or punishment. The English suffix **'algia'** which is used in the formation of nouns identifying kinds and locations of pain (e.g. mastalgia meaning breast pain or myalgia meaning muscle pain) is derived from the Greek **'algos'** meaning pain or penalty.

Making an estimate of pain experience is difficult and self-reporting is an important method of assessment.

Interestingly it has been shown that health care professionals tend to underestimate the severity of pain they experience.

So, what is pain? It is a distressing, unpleasant experience often associated with emotional disturbance which usually involves tissue damage. Acute pain is of short duration.

Normally a scale of 0-10 is used where 0 = no pain and 10 = the worst pain ever experienced. Everyone suffers pain, which may be acute or chronic, but with an aging population, effective treatment is being sought especially for the pain of a persistent nature which may be complicated to treat particularly in the frail.

Chronic pain is pain which persists for a period of three months or more, irrespective of treatment. It is a salutary fact that about one quarter of all adults experience pain every, or almost every, day. Controlling pain is a key priority for all clinicians, irrespective of the cause of the symptom. Treatment of pain may

take many forms but, despite all the available technology, sometimes pain proves resistant to all therapy.

Pain is not usually present in isolation. It is frequently one of a number of symptoms associated with a specific pathology. The results of pain are distress, depression, irritability, lethargy, insomnia, and of course the reduced ability to undertake physical activities. Severe pain disrupts mental activity too and such people often say that they "cannot think for the pain".

For there to be a good chance of managing the pain it is important to obtain an accurate clinical assessment and a reliable diagnosis, because, often, a pain-killer is not the best treatment for pain. A detailed history establishing the location, pattern and character of the pain, as well as any aggravating and relieving factors, is essential to try to understand the underlying pathology. Its severity (using the rating scales) enables the clinician to understand the nature of the challenge of symptom control.

Pain relief or simply 'the pain clinic' may go under the rather American name of algiatry, which is what a pain relief specialist actually does.

The management of the pain itself will depend on the most accurate possible diagnosis in order to decide whether the approach should be simply with **analgesics** (pain-killers) or whether the treatment of the underlying cause will bring about a more long-lasting, more profound or permanent resolution.

There are, of course, a huge number of pain relieving drugs, although the formulation of many is similar.

Until relatively recently the choice of pain relief lay between tablets or capsules and injections. More recently, however, a whole variety of formulations have become available and pain control is now available by suppository, sublingual tablets, buccal (between cheek and gum) tablets, nasal sprays and skin patches.

Much pain control is handled by doctors but, of course, the often intractable pain of terminal care usually falls to the MacMillan nursing service and the hospice care facilities. Many MacMillan and specialist palliative care nurses now have non-medical prescribing rights and offer a comprehensive superb pain management service which has considerably improved the care of the dying.

Analgesics are selected based on the principle that the lowest dose of the least powerful drug which controls the pain should be employed. NICE and Scottish (SIGN) guidelines advocate the use of the so-called analgesic ladder which uses the principle and so analgesic potency is increased stepwise according to patient response.

Step one: the use of non-opioid analgesics. Good old paracetamol, aspirin and the NSAIDs (non-steroidal anti-inflammatory drugs) such as ibuprofen, diclofenac, naproxen and so on.

These are good for mild to moderate pain, such as might be experienced with osteoarthritis.

Step two: the use of mild opioids. These include drugs such as codeine, dihydrocodeine and tramadol. These drugs may be combined with non-opioids such as paracetamol in such formulations as co-codamol. Even the mild opiates may have undesirable side effects such as drowsiness and constipation and the analgesic effect must be titrated against the undesirable effects to produce the most suitable balance of dosage.
It may be necessary to step up to morphine or fentanyl but the dose should be carefully titrated against response using simple administration.

Step three: strong opioids (and any other pain killers that work). For severe intractable pain (such as cancer pain) these drugs may be invaluable but they do cause often severe side effects; nausea, vomiting, constipation, drowsiness and, in high doses, respiratory depression. This means that, if used, other medication may be required to manage the side effects. Of course, a major concern with all the opioids is that of addiction. This is really of no consequence in terminal pain management but for the severe chronic pain of musculo-skeletal and other origins, the concern about addiction may be a valid one.

Apart from morphine, there are a variety of opioid drugs including tramadol, methadone, which may be less sedating than morphine, and buprenorphine, which is of longer duration than morphine and which is also available sublingually for swift action. Additionally it is available in the form of a patch which can be provided in varying doses of the drug and which needs to be changed only once every four to seven days depending on the brand. Fentanyl is also available in patch form (as well as being used by injection) and is also available in several strengths and needs to be changed every three days. Fentanyl is also available as a nasal spray and as a buccal lozenge, both of which can help with breakthrough pain.

Of course, pain may be managed with techniques other than the use of pain killers. A whole host of approaches are available, either alone or in combination with pain relief, to relieve distressing symptoms.

Doctors often refer to the use of ***adjuvants***. The word is derived from the Latin verb *adiuvare* meaning to aid. Adjuvants are in fact drugs that modify the effects of other drugs or treatments. Various types of drugs may be used

- Antidepressants
- Muscle relaxants
- Neuropathic pain relievers
- Steroids

It may be possible to block the nerve(s) from which pain fibres are supplied using local anaesthetic (which is often temporary) or chemicals such as alcohol (which may be permanent). Such nerves may also be cauterised or divided to achieve a permanent effect. TENS machines (transcutaneous electrical nerve stimulation) may also be helpful. Electrodes are placed in the area of the pain and they are believed to work by sending impulses through the electrodes which compete

with the electrical pain stimuli travelling from the pain-emitting area.

Of course many sources of pain, particularly from cancers, produce pain which can be relieved by surgery, chemotherapy, radiotherapy or hormone therapy.

Many non-medical practitioners also provide invaluable support for the patient in pain and they are often needed to work as a team. I have written above about the wonderful work of the MacMillan and specialist palliative care service, often not fully understood by the medical profession and, as non-medical prescribers, who manage patients with chronic pain so well.

Other invaluable support may be obtained from osteopaths and physiotherapists, clinical psychologists and occupational therapists. CBT (cognitive behavioural therapy) can help patients in pain to understand the relationship between the emotional and physical response. Lifestyle training may also help to cope with the strain of pain.

Acupuncture, meditation and hypnosis have also been used to provide support.

Despite all these approaches, all these drugs, all these techniques, it is clear that we do still fail some of the patients and do no effectively control their pain. It may be lack of courage, lack of commitment, lack of knowledge or lack of skill; it may be due to failure to see the person as a whole and not as a pain; it may be the determination of the individual to suffer irrespective of help offered.

Short of the discovery of a wonder drug with superb analgesic properties and no side effects, the management of pain will increasingly become a problem for the whole medical team as we wrestle with increased morbidity and an ever aging population.

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