

Narcotics are commonly required for the treatment of severe pain due to malignancy at all ages. In recent years, it has been recognized that they may also benefit older people with nociceptor pain that is unresponsive to other management strategies. In this circumstance, narcotic treatment should be undertaken in the full knowledge of relevant laws and potential for side effects in patients who are fully informed and involved in their treatment program. The choice of narcotic depends on the preference and experience of the clinician. It must be recognized that both benefits and side effects of narcotics occur at lower doses in older people than in younger cohorts.

Key words: aging, pain, narcotics, comorbidity, side effects

The Use of Narcotics for Pain Management in Older Adults

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Introduction

Acute pain affects approximately 5% of older people at any one time, whilst chronic pain that interferes with usual activities affects about 50%.^{1,2} As in younger cohorts, the sources of pain are nociceptor, neuropathic, and mixed, with amplification and attenuation of pain commonly affected by psychosocial factors. Narcotics are not indicated in situations where the pathogenesis of the pain is obscure or psychological factors are dominant. The common situations where narcotics may be considered for the treatment of older people are acute pain due to trauma and procedures, severe pain due to cancer, and nonmalignant chronic pain when other analgesic strategies have proven inadequate. The decision is made to trial narcotics after appropriate multidisciplinary assessment of patient and caregivers.

As with younger people, narcotics work best for nociceptor pain in older adults, although consideration of benefits and disadvantages need to be monitored in all patients. When narcotics are to be used, proper consideration of appropriate pain and functional outcome measures are required for assessment and monitoring (Table 1). Patients and caregivers—including professional, family, and other—need to be part of the decision making and monitoring processes. There has to be a contract between the parties, often in writing, that acknowledges the potential benefits, side effects, and risks of tolerance, habituation, and addiction.

Implementation of narcotics may be pain contingent, time contingent, or prophylactic in different circumstances. The oral route is preferred over subcutaneous, intramuscular, and intravenous

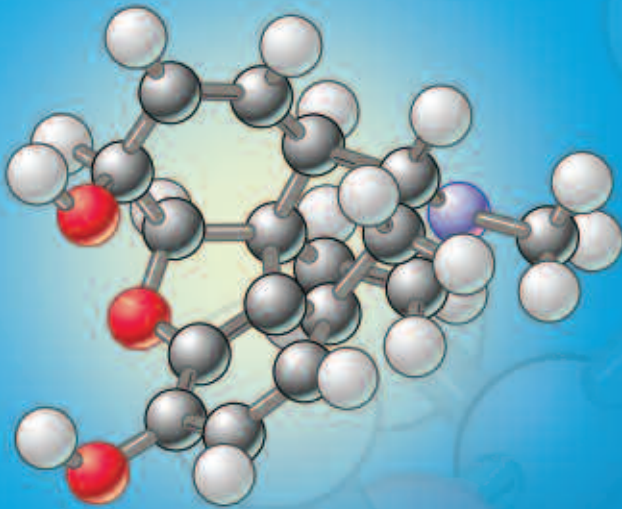
routes in subacute and chronic settings, and slow-release preparations are generally well tolerated despite the geriatric aphorism that medications with a short half-life are preferable in older people to those with long half-lives. Other routes of administration, such as intrathecal or epidural, are seldom used in older people. Older people without cognitive impairment manage patient-controlled anesthesia in postsurgical situations.^{3,4} Many of the factors that arise when treating the older person with narcotics are raised in the Clinical Practice Guidelines of the American Geriatrics Society.⁵

Physiological and Pharmacological Considerations

Narcotics act as agonists at opioid receptors in the central nervous system, mostly of the mu type. It has been shown that there is increased sensitivity of older people to narcotic medication.^{6,7} One reason for this sensitivity may be pharmacodynamic; it has been shown in one PET study that opioid binding in the brain is enhanced with age.⁸ However, this is hard to separate clinically from the many possible pharmacokinetic reasons that older people might have for easier access of administered narcotic to the brain. These include diminished cardiac output leading to higher peak concentrations after bolus doses, increased volume of distribution due to increased proportions of fat, reduced clearance because of reduced liver blood flow, and reduced clearance of active metabolites that undergo renal excretion. Although doses of a narcotic need to be sufficient to ameliorate the pain, in practical terms older adults typically receive lower doses than

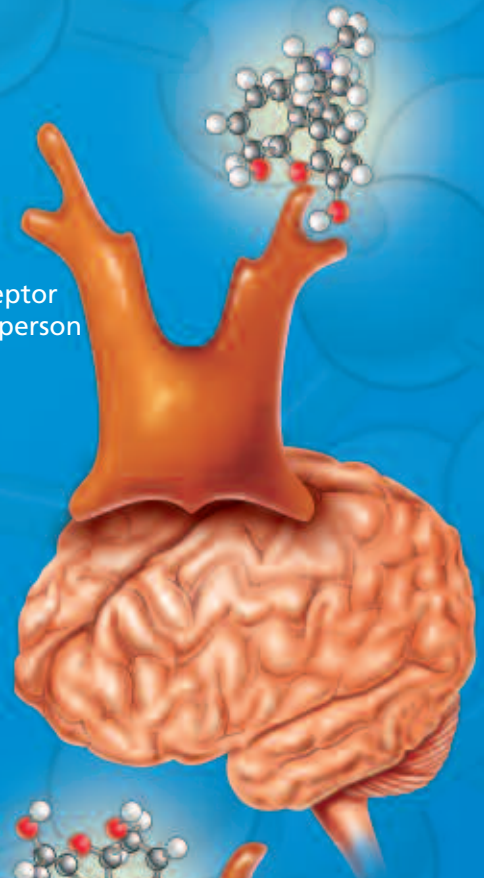
Figure 1:

Physiological and Pharmacological Considerations with the Use of Narcotics for Pain Management in Older Adults



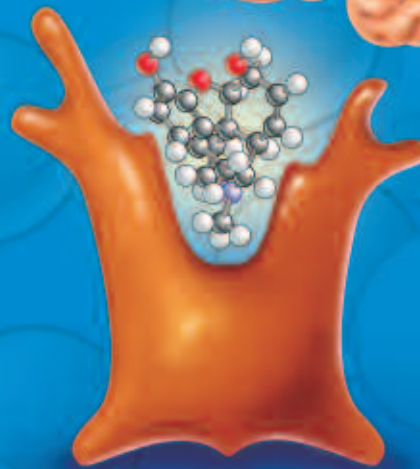
Opioid

Opioid and receptor in CNS of younger person



Common situations where narcotics may be considered for the treatment of older people are acute pain due to trauma and procedures, severe pain due to cancer, and nonmalignant chronic pain when other analgesic strategies are inadequate.

Narcotics act as agonists at opioid receptors in the central nervous system. There is evidence of increased sensitivity to narcotic medication in older people, perhaps due to a pharmacodynamic change, where opioid binding in the brain is enhanced with age.



Pharmacodynamic change increases sensitivity to narcotic medication in older people.

Table 1: Questions to Consider before Prescribing Narcotics in Older People

What realistic outcome has the patient designated as their goal?
What other options have I considered for improving pain management?
Have other health care professionals assessed the patient?
What measures of pain and activity am I going to use for assessment and monitoring?
Have I involved both the patient and caregivers in the plan?
Do all participants understand the benefits and disadvantages of narcotic use including side effects common in older people, habituation, addiction, and the laws governing use?

their younger counterparts so as to avoid the toxicity that inevitably arises if too vigorous an approach is taken. A reasonable approach is to use the same schedule of administration as for a young adult but commence use with half or less the usual dose.

Aspects of physiological and pharmacological considerations for the use of narcotic treatments are illustrated in Figure 1.

Comorbidity and Side Effects

Pain management in the older population is complicated for a number reasons. One confounding factor is comorbidity. Cognitive impairment, overt and unrecognized, is common over the age of 80 and always needs to be assessed in this age group if medications known to affect cognition are to be used. Impaired cognition may influence the assessment process as pain is a complex construct that includes domains outside the sensory-discriminative. Treatment strategies require understanding by the patient of issues such as psychosocial contributors to the pain, the drug administration routine, and the need to balance effects on pain with side effects likely to impede function and functional independence. It is not unusual for the pain to worsen with the introduction of narcotics because cognitive coping strategies have deteriorated in the patient with minor cognitive impairment.

Other side effects that occur as a direct consequence of too high a dose of narcotic acting on a brain with limited reserve are well known and occur occasionally at all ages with overdose. It

behooves the clinician to be even more alert to these possibilities in the very old. Sedation, confusion, and respiratory dysfunction often take the unwary by surprise. Falls lead to other morbidities. Myoclonus takes days to weeks to resolve once the cause is recognized.

Older people are also often functioning at the limit of their reserves in other ways. Thus, urinary dysfunction may become retention as a consequence of narcotic use. However, side effects common in young adults, such as nausea and vomiting, may be less frequent in older people. Constipation occurs early in the course of treatment and may not be recognized because of delayed symptoms or nonspecific presentation with delirium well before any evidence of bowel obstruction. The use of narcotics in older people demands simultaneous prescription of laxatives, starting with a bowel softener, a high-fibre diet, and added fluids, but with a low threshold for introducing bowel stimulants in addition. Lactulose, which acts as an osmotic laxative by changing the composition of bowel flora, should be used with care in older patients.

True allergy to narcotics in older people is rarely seen, apart from skin rash with codeine, having generally been identified in earlier life. Allergy to one narcotic doesn't necessarily mean allergy to another. The clinician should not, however, always readily accept the patient's view of allergy but try to confirm it with the person prescribing at the time. Nausea and vomiting in the past should not necessarily lead to the withholding of a

drug that can be of great benefit to the patient in severe pain.

Which Narcotic?

Codeine (methylnorphine), which is generally used for less severe pain, acts through its conversion to morphine in the liver via the cytochrome oxidase system, although approximately 10% of Caucasians are unable to process it using this pathway. The major narcotic in general use with older patients is morphine in one of its many formulations. Dosing schedules are the same at all ages. A short acting drug is used initially, but once the relevant 24-hour dose is determined, a long acting formulation is substituted with provision for further breakthrough doses of the short acting drug. For example, breakthrough doses are half the routine dose for that age group. There has been some movement in recent years towards using oxycodone in preference to morphine in patients with nonmalignant pain, but the evidence for preference appears more psychosocial than pharmacologic. Pethidine (meperidine) should not be used in older people because of the risk of seizures caused by metabolites with continued use over more than a few days and the risk of serotonin syndrome with concurrent use of antidepressant medications. Hydromorphone is generally reserved for those patients with severe renal failure. Fentanyl is equipotent at all ages but the doses provided by the manufacturer are relatively high and likely to cause side effects in older patients not already tolerant to morphine. Methadone has an unpredictable and long half-life that may lead to toxicity more easily in older people and it is therefore rarely used, although it is relatively inexpensive compared to long-acting morphine preparations.

As always in medicine, the clinician is well advised to become familiar with the profile and use of a limited range of medicines for pain so that patients are not subject to side effects arising from injudicious use. Combinations of narcotic medications are not recommended, but different formulations of the same narcotic may smooth out pain control; mixtures of narcotics with

simple analgesics⁹ and adjuvant analgesics may also be helpful. The physician must always be alert to the content of proprietary formulations as sedatives are often included and must be avoided in the older patient. Narcotic overdose in older people is treated with naloxone in doses applicable to younger adults.

Narcotic Use in Nonmalignant Pain

Narcotics are not widely used in patients with nonmalignant pain.⁵ Neuropathic pain caused by postherpetic neuralgia or poststroke pain, for example, rarely responds to narcotics without the development of unacceptable side effects (although there are a few trials that have shown benefit in the former condition).^{10,11} In this situation, concurrent treatment with adjuvant analgesics is considered, but this adds to the burden of side effects in many cases. However, nociceptor pain, which is unresponsive to simple analgesia, may respond well to low-dose narcotics.¹² Although use of tramadol and dextropropoxyphene may be considered, they are often precluded in the older patient because of unacceptable side effects or the potential for seizures. An older person may find that a small dose of narcotic allows them to undertake a prescribed exercise program, or

even a round of golf, if taken prophylactically an hour before that activity. The same approach is helpful in the hospital setting in relation to bathing, dressing changes, or even planned transfers from bed to chair in appropriate patients.

Summary

The judicious use of narcotics can help alleviate suffering in older people, whether they have malignancy or pain unassociated with malignancy that is unresponsive to other treatment strategies. Physicians only need to slightly modify their approach to the prescription of narcotics in this age group to achieve satisfying outcomes for patients and caregivers. ◆

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