

CHAPTER 1



INTRODUCTION

Despite many advances in the knowledge of pathophysiology and pharmacology, pain in the early postoperative period remains a common problem in current anesthetic practice. The physiologic consequences of postoperative pain are well substantiated.⁽¹⁾ The sympathetic stimulation that accompanies severe pain leads to tachycardia, hypertension, and increased peripheral vascular resistance, which subsequently increases myocardial oxygen consumption, which may in turn lead to ischemia or infarction. Increase sympathetic outflow also decreases intestinal motility and may induce or prolong postoperative ileus. Some surgical procedures, particularly thoracic and abdominal operations, have pronounced effects on respiration because of alterations in the action of respiratory muscles. Impaired ability to cough and perform deep-breathing maneuvers may lead to retention of secretions and to atelectasis and may promote hypoxemia and pulmonary infection. Many of these consequences can be eliminated or reduced with currently

available analgesic techniques. However, postoperative pain is still undertreated for a number of reasons. These include lack of knowledge regarding the effective dose ranges and durations of action of opiates and fear of respiratory depression and addiction.

The concept of pre-emptive analgesia has recently been advocated and has gained widespread acceptance.^(2,3) This concept focuses on prevention rather than on the treatment of pain. The term pre-emptive analgesia implies that analgesic intervention provided before surgery prevents or reduces subsequent postoperative pain by preventing the massive nociceptive bombardment of the central nervous system (central sensitization) produced by surgery.^(4,5) It also describes a situation where the administration of a pharmacological agent administered before the onset of a painful stimulus causes a decrease in the intensity of pain felt, and subsequently there is a decrease in the total amount of analgesic required compared with administration of an agent after a painful stimulus. Pre-emptive analgesia, administered in the form of narcotics, non-steroidal anti-inflammatory agents or local anesthetics, is thought to alter peripheral and central sensitization to nociceptive impulses. There is experimental evidence that the dose of morphine required to prevent the

hyperexcitability changes in the spinal cord is lower than that required to suppress these changes once they have occurred.^(6,7) This concept of preemptive analgesia creates the great change in attitude and clinical practice regarding postoperative pain management. If we successfully block the afferent impulses that are trying to reach the central nervous system before a tissue injury and cause a decrease in the intensity of pain and analgesic requirement, we would certainly not have to worry about side effects of giving too much analgesics during postoperative period. The patients would be benefit by having adequate pain relief without suffering from serious adverse effects of analgesic agents such as respiratory depression and addiction. This will also leads to rapid recovery, improved quality of life, shorten hospital stay and reduced cost of medical care.

Since morphine is not only cheap but also the most effective strong opioid, it remains popular as the principal analgesics used during perioperative period. Therefore, the question that needs to be addressed here is whether the intravenous administration of morphine before surgical incision would be more effective in preventing postoperative pain than the same dose given after incision. If this is the case,

preincisional morphine would be beneficial in postoperative pain management since it might decrease the dose of analgesic consumption postoperatively and result in fewer side effects. In addition, it would be an alternatives to local anesthetic and any other opioids and nonopioid analgesics for prevention of postsurgical pain according to the concept of pre-emptive analgesia.



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