

CHAPTER 1



INTRODUCTION

Despite substantial advances in the knowledge of acute pain mechanism and in their management, acute post-operative pain is generally not effectively treated. Mark & Sacher ¹ reported that three-quarters of the patients who received narcotics for severe pain continue to experience pain. These findings have been confirmed in adults by Cohen ² and in children by Mather & Mackie ³. In the USA, approximately 23 million patients undergo surgery every year and the majority of these experience postoperative pain ⁴. There are a variety of reasons for poor, ineffective management of acute pain as followed (1) the common idea that pain is merely a symptom and not harmful in itself (2) the concerns about respiratory depression and other opioid-related side effects such as nausea and vomiting (3) the fear of the potential for addiction to opioids (4) the lack of understanding of pharmacokinetics of various agents (5) the lack of appreciation of variability in analgesic response (6) the patients' difficulties in communicating their need for analgesia. Not only humanitarian reasons for improving acute postoperative pain treatment but unrelieved acute pain may result in harmful physiological and psychological effects. These adverse effects may result in significant morbidity and even mortality. In addition, surgical trauma or other noxious stimuli are associated with an injury responses or inflammatory responses. These physiologic inflammatory responses or acute pain effects can be addressed by hypertension, tachycardia, vasoconstriction, skeletal muscle spasm, hypoxemia,

decreased intestinal motility, increased sphincter tone, immobility, venous stasis and potential for thrombosis, and possible pulmonary embolism. In addition to these, fear and anxiety are the major emotional concomitants of acute pain. When pain is prolonged and unrelieved, the sufferer may express a range of emotions, including anxiety, delirium, abnormal sleep patterns, inability to concentrate, increased boredom and depression. Evidence of shortened hospital stay, decreased morbidity and mortality and increased patient satisfaction have been reported in association with effective relief of acute pain⁵⁻¹⁰

Acute pain management varies from simple oral analgesic administration to sophisticated procedures, depending on severity or intensity of pain, personnel and equipment facilities, or perception and knowledge of staffs. It is now clear that certain principles of acute pain management must be applied to ensure good analgesia, flexibility and tailoring of treatment to an individual rather than rigid formulae. This is the concept of patient controlled analgesia. However it is not possible or not desirable to completely alleviate all pain in postoperative period, it should be possible to reduce pain to a tolerable or comfortable level. Most of the total knee replacement procedure have been done under continuous epidural anesthesia. Therefore, the epidural catheter can be further easily used for postoperative analgesia.