

## CHAPTER I

### INTRODUCTION



#### Rationale and background

Total knee arthroplasty is associated with extensive postoperative pain. It is severe in 60% and moderate in 30%[1], and it hinders early intense physical therapy, the most influential factor for good postoperative knee rehabilitation[2, 3]. The majority of patient who needs total knee arthroplasty mostly are more than 50 years of age. Effective postoperative pain control is an essential component of the care of the surgical patients. The advantages of effective postoperative pain management include patient comfort and therefore satisfaction, earlier mobilization, reduced risk of deep vein thrombosis, faster recovery and reduced cost of care[4-6]. The goal of postoperative pain management is to relieve pain while keeping minimal side effects. Opioid analgesics remain the primary therapy for moderate to severe pain after surgery but they can cause many undesirable side effects: such as sedation, respiratory depression, nausea and vomiting, hypotension and bradycardia, pruritus, and inhibition of bowel function. Aging itself is associated with a variety of changes, diminished functional status and chronic diseases. Postoperative analgesia with narcotics is associated with potential side effects or complications that might be more frequent in the elderly patients. On the other hand, inadequate analgesia has been reported to be more frequent in the elderly patients[7-9].

Postsurgical pain has commonly been managed with opioid analgesics alone. Although effective, opioids (e.g.morphine) are associated with adverse effects such as respiratory depression, sedation, nausea, vomiting, constipation, and intestinal ileus. The availability of an effective, but safer analgesic, that would be co-administered and reduce the amount of opioids used, would therefore be an advantage. Pain is multifactorial depending on such as age, drug addict, drug tolerance, type of surgery, duration of surgery and anesthetic technique. When tissue injuries happened, there is cyclo-oxygenase in human body inducing prostaglandin, which causes pain.

Conventional non-steroidal anti-inflammatory drugs (NSAIDs) have been shown to produce opioid-sparing effects when administered to postoperative surgical patients.

Parecoxib sodium is a highly selective COX-2 inhibitor undergoing clinical development with intended to use perioperatively as an analgesic agent [11]. Therefore, we designed a study to test the hypothesis that parecoxib could produce an opioid-sparing effect, thereby decreasing opioid-related side effects when administered during the early postoperative period after total knee arthroplasty under spinal anesthesia.