Accurate assessment of pain in different age groups and the effective treatment of postoperative pain is constantly being refined; with newer drugs being used alone or in combination with other drugs continues to be explored.

The practice of pediatric pain management has made great progress in the last decade with the development and validation of pain assessment tools specific to pediatric patients.

A multimodal approach to preventing and treating pain is usually used. Mild analgesics, local and regional analgesia, together with opioids when indicated, are frequently combined to minimize side effects of individual drugs or techniques.

Children suffer postoperative pain in the same way as adults. The main difference is that factors such as fear, anxiety, coping style and lack of social support can further exaggerate the physical pain in children. The analgesic requirement following surgery does not depend on the age of the patient but on the nature of the procedure and the pain threshold of the patient.

Figure 1

Pain Scales.

Notes: At Children's National Medical Center (CNMC), Staff have a choice among three different scales to assess a child's pain. The Objective Pain Scale (OPS) is used for children up to 3-years of age or nonverbal children. The Wong-Baker Faces Rating Scale is used for persons age 3 and over, and the Lineal Analog Pain Scale is used for older children and adolescents.

Figure 2

PACU record at CNMC.

Notes: Pain is assessed and a Pain Score documented when the child arrives in PACU (A), upon discharge (B), and every time vital signs are recorded (C). Similar assessments and documentation are made on the Pediatric Flow Sheet for in-patients at minimum every 8-hour shift.

Perioperative pain management therefore begins during the preoperative visit by preparing both the parent and the child about the upcoming surgery and information about the type of pain that is associated with it. The knowledge regarding the different types of drugs, blocks, and their effectiveness, as well as the side effects must be conveyed to the parent prior to surgery.

The current trend is to provide preemptive regional blocks before surgery, after anesthetic induction, as well as postoperative local infiltration of the wound, in an attempt to lessen the need for narcotics during recovery. An ideal way to provide better postoperative analgesia in children is the use of multiple analgesics with additive or synergistic effects, yet with different side effect profiles so that adequate analgesia can be provided with the least amount of side effects. Moderate to severe pain in any patient is best treated with a combination of analgesic techniques. Pain can be treated at the peripheral level using local anesthetics, peripheral nerve blockade, nonsteroidal anti-inflammatory drugs (NSAIDs), or opioids. At the brain level it can be treated with local anesthetics, opioids, and α_2 agonists.

Nonopioid analgesics

Acetaminophen (Paracetamol), Ibuprofen, Naproxen, Diclofenac, and Ketorolac are the nonopioid analgesics that are available for the treatment of pain. When used alone, they are adequate to treat mild pain although they need to be combined with other agents for treating moderate to severe pain.

Opioid analgesics

A short acting drug is usually chosen when opioids are indicated in the immediate recovery period. Intravenous use allows more accurate titration of the dose and avoids the use of "standard" dosages based on weight, which may lead to under-medication or relative overdose. Fentanyl, up to a dose of 2 μg/kg, is the drug of choice for intravenous use. In the absence of an intravenous route, meperidine (0.5 mg/kg) and codeine (1.0–1.5 mg/kg) can be used intramuscularly. Intramuscular (IM) codeine tends to result in less vomiting than other opioids, especially morphine.[31] However, children are so fearful of IM injections that they often will deny pain to avoid the therapeutic and equally painful injection. Other novel routes of administration like the nasal administration of fentanyl has been shown to result in an analgesic blood level comparable to that following IV use, making it useful in children who do not have, or have lost, their IV access.

Pain consultants and a group of equally committed and specially trained nursing staff is essential for the successful management of acute pain in infants and children.