Perioperative Pediatric Pain Management

Assay

Submitted by

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To ***my dear mother*** *who bears me all the time waiting for nothing.*

To ***my dear father my friend and my lover*** *who taught me everything, how to be diligent and how to succeed even after failure.*

To ***my dear sister and brother for*** *everything they gave to me.*

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List of abbreviation

AMPA	α-Amino-3-Hydroxy-5-Methyl-4-Isoxazolepropionic Acid receptor
C0X-2	Cyclo Oxygenase 2
CHEOPS	Children´s Hospital of Eastern Ontaries Pain Scale
CHNMC	Children Hospital National Medical Center
COX-1	Cyclo Oxygenase 1
EMLA	Eutecthic Mixture of Local Anasthesia
GABA	Gamma Amino Butyric Acid
GRS	Graphic Rating Scale
IM	Intramuscular
IN	Intranasal
IV	Intravenous
MAC	Minimal Alveolar Concentration
NCA	Nurse Controlled Analgesia
NK-1	Neurokinin-1
NMDA	N-Methyl-D-Aspartate receptor
NRS	Numerical Rating Scale
NSAIDS	Non Steroidal Anti- Inflammatory Drugs
PAG	Peri-Aquiductal Grey
PCA	Patent Controlled Analgesia
PET Scan	Positron Emission Tomography Scan
PGE2	Prostaglandin E2
PGE2	Prostaglandin E2
PPQ	Pediatric Pain Questionaire
PSA	Procedure Sedation and Analgesia
SC	Subcutaneous
TENS	Trans Cutaneous Electrical Nerve Stimulation
VAS	Visual Analogue Scale

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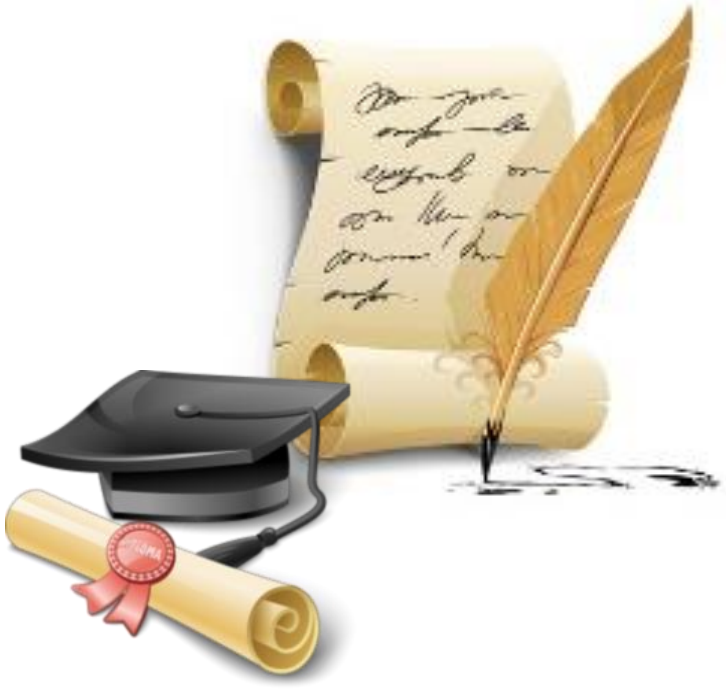


Introduction

Acute pain is one of the most common adverse stimuli experienced by pediatric population as a result of surgery, illness, any injury and necessary medical procedure. Pain is associated with increased anxiety, avoidance, somatic symptoms, and increased parent distress and may lead to long term effects ***(Walker, 2008).***

The International Association for the Study of Pain has defined pain as an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage ***(Lemons et al., 2000).***

Several experts suggest that the neonate's expression of pain does not fit within the strict definition of the International Association for Study of Pain because of the requirement for self-report. This lack of ability to report pain contributes to the failure to recognize and treat pain aggressively during infancy and early childhood ***(Lemons et al., 2000).***

Because neonates cannot verbalize their pain, they depend on others to recognize, assess, and manage their pain. Therefore, health care professionals can diagnose neonatal pain only by recognizing the neonate's associated behavioral and physiological responses ***(Gurmukh Das Punshi et al., 2009).***

Recognition and assessment of pain is the first and most important step in successful pain management. Pain should be assessed on a regular basis using self-report, behavioral observation and physiologic measures, bearing in mind the age of the child and his or her communication capabilities. There are many different scales that can be used in different age groups. It is of importance to use a scale that is feasible in the clinical setting ***(Lundeberg et al., 2004).***

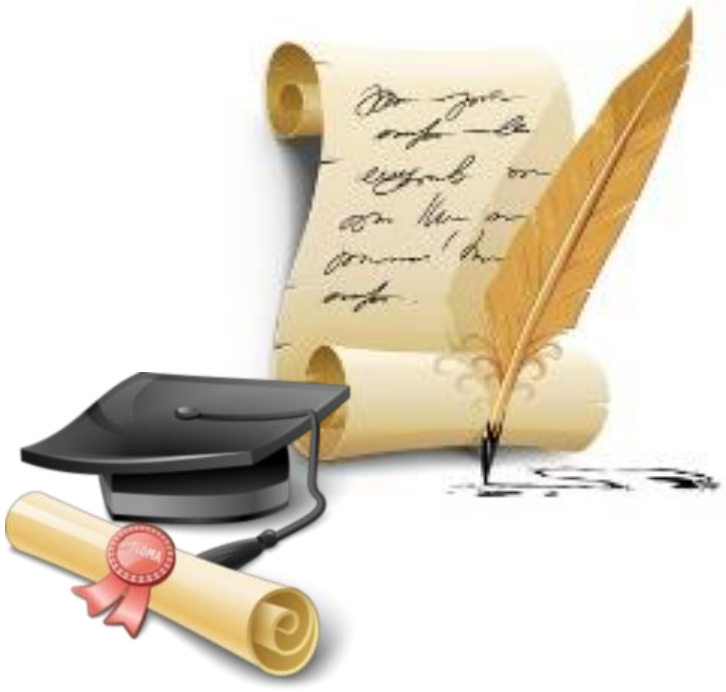
Procedural sedation and analgesia is a safe and effective means to manage a child's pain and anxiety. When the practitioner is deciding which methods of PSA to use, it is important to determine whether the intended goal is sedation or analgesia or both and to consider the adverse reactions and side effects of each agent. Appropriate safety measures should be undertaken including supportive equipment, monitors and a pre-sedation assessment ***(Doyle &Colletti , 2006).***

After procedural sedation, children should not be discharged from the medical facility until they have awakened to their baseline mental and ambulatory status ***(Green et al., 2004).***

Aim of work

To shed light on perioperative pediatric pain management.

Chapter I



CHAPTER 1

DEFINITION & PHYSIOLOGY OF PAIN

I. Definition of Pain

Pain, as defined by International Association for study of pain, is an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage ***(Lemons et al., 2000).***

Pain in both the adult and the child is a complex phenomenon that involves not only physical stimuli, sensory, physiology, and autonomic changes, but also cognitive function, effective states, and behavioral phenomena (***Godfrey, 2005).***

The definition of pain can be aided by limiting the scope of discussion to acute pain. Pain usually has a definite end point anticipated within days or weeks, under this circumstances operational definition of pain is "an unpleasant sensory and emotional experience associated with acutal or potential tissue damage. Nociception can be defined as a response specific to potentially tissue damaging stimulation ***(Godfrey, 2005).***

II. Types of Pain

Pain has been classified into two different major types:

- A. Fast Pain.
- B. Slow Pain.

Fast Pain:

It occurs within about 0.1 second when stimulus is applied, fast pain is described by many alternate names such as sharp pain, pricking pain, acute pain, electric pain and others.

This type of pain is felt when a needle is struck into the skin or when the skin is cut with a knife and also felt when the skin is subjected to electric shock and it's felt in most at the deeper tissue of the body ***(Helms & Barone ., 2008).***

Slow Pain:

It occurs after a second or more and then increase slowly over many seconds and sometimes even minutes. Slow pain is also known by multiple additional names such as burning pain, aching pain, throbbing pain, nauseous pain and chronic pain. This type of pain usually associated with tissue destruction. It occurs both in the skin and almost any deep tissues or organs ***(Helms & Barone ., 2008).***