Comparison of Intraincisional Tramadol, Lidocaine and Placebo on Post Cesarean Section Pain Relief: Randomized Clinical Trial

Thesis

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List of Abbreviations

ACOG	**:**	American Collage of Obstetricians and Gynecologists
ATP	**:**	Adenosine Tri-Phosphate
CBC	**:**	Complete blood count
CD	**:**	Cesarean Delivery
CNS	**:**	Central Nervous System
Cox-2	**:**	Cycloxygenase-2
CPD	**:**	Cephalo-pelvic disproportion
CS	**:**	Cesarean section
ECG	**:**	Electrocardiograph
GABA	**:**	Gamma Amino- Butyric Acid
IM	**:**	Intra-muscular
IUGR	**:**	Intra Uterine Growth Retardation
NMDA	**:**	N-Methyl D-Aspartate
NRM	**:**	Nucleus raphe magnus
NSAID	**:**	Non-steroidal anti-inflammatory drug
PAG	**:**	Periaqueductal Grey
PC	**:**	Prothrombin concentration
PT	**:**	Prothrombin time
RCOG	**:**	Royal Collage of Obstetration and Gynaecologist
SEM	**:**	Stander error of mean
TED	**:**	Thromboembolic disease
VAS	**:**	Visual Analogue Scale
VBAC	**:**	Vaginal Birth After Cesarean delivery
VMM	**:**	Ventromedian Medulla
WDR	**:**	Wide Dynamic Range
WHO	**:**	World Health Organization

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Introduction

Cesarean section delivery is becoming more frequent . Childbirth is an emotion-filled event and the mother needs to bond with her newborn baby as early as possible. Any intervention that leads to improvement in pain relief is worthy of investigation *(**Bamigboye et al., 2010**).*

Females undergoing cesarean section often wish to be awake postoperatively and to avoid excessive medications affecting interactions with their newborn infant and visitors ***(Mitra et al., 2012).***

Postoperative pain may be sever lasts at least 48 -72 (hours), and may also lead to delayed patient ambulation, prolongation of hospitalization, recovery, increase atelectasis, vascular thrombosis ***(Angle, 2002).***

Interestingly, recall of sever acute post operative pain appear to be a factor involved in development of chronic postoperative pain after caesarean delivery ***(Pan, 2006).***

Certainly, analgesic drugs avoiding the above side effects and providing better and longer lasting post operative analgesic effect are sought. Because of analgesic properties and lack of opioid induce adverse effects ; local anesthetic drugs are increasingly used in treatment of surgical pain .The rationale behind the use of preemptive anesthesia “local anesthetic given during the operation to prevent or reduce pain afterwords” is to stop pain from starting by blocking the usual responses of nervous system to pain .

Elimination of some of the superficial components of the pain after caesarean delivery could modulate the perception of deeper visceral pain .The data from previous studies suggest that the infiltration of local anesthesia into the wound

during caesarean delivery appear to be effective in reducing post operative narcotic requirement ***(Azin et al., 2007).***

As a result of their predictable analgesic and anesthetic sparing properties; opioids analgesic drugs are often administrated during the post operative period; however, they are associated with many side effects such as dizziness, respiratory depression, paralytic ileus, nausea, vomiting, pruritis and urine retention. To control and treat pain, these drugs need to be frequently injected either intravascular(IV) or intramuscular (IM).
In most cases where pain control is affected by the administration of opioids analgesic and based on patient requirement and demand, sufficient analgesia does not usually develop ***(Bamigboye, 2010).***

Large amount of opioid drugs are often required in the management of intense postoperative pain. However this option is associated with many side effects including evident disruption of mother /newborn bonding ***(Tauzin et al., 2009).***

Recent surveys report only modest success in providing suitable analgesia, as 30% to 86%of surgical patient report moderate to sever pain after a surgical procedural .

Although “advanced” analgesia techniques, such as epidural analgesia or perineural catheters can provides superior analgesia, many of these modalities are labo-intensive and expensive ***(Liu et al., 2006).***

Tramadol is a weak opioid and selective for the (***M***) receptors, and recently been reported to have a local anesthetic action on peripheral nerves, demonstrated

as a local anesthetic effect by possible neural conduction blocked by tramadol on sciatic nerves of rates ***(Yavuz et al.,2013).***

Lidocaine is a short acting local and regional anesthetic and antiarrhythmic agent . Its major target on excitable cells is the voltage sensitive sodium channel, which account for increased sodium permeability noted during the rising phase of the action potential in the peripheral nerves, skeletal muscle , neuroendocrine and heart cells **(*Tetzlaff, 2000).***

The local anesthetic may be administered by pre- or post incisional abdominal nerve block (local anesthetic injected to block the nerves before cutting the skin at the beginning of the operation, or after closing the skin at the end) or pre- or post-incisional abdominal wound infiltration. It may also be administered by continuous wound irrigation ***(Givens et al., 2002).***

Aim of the Work

To evaluate the impact of local lidocaine versus tramadol intra-incisional site infiltration in patients undergoing cesarean sections, on post operative pain and analgesic requirements.

Research question: Is the infiltration of the cesarean incision with local lidocaine or tramadol will relieve the post operative pain and decrease post operative analgesic use or not?

Research hypothesis: The infiltration of cesarean incision with lidocaine or tramadol may relieve the post operative pain and decrease post operative analgesic use.

Patients and Methods

Type of the study:

Randomized, double blinded, placebo controlled trail.

Study setting:

This clinical trial will be conducted at Ain Shams University maternity hospital.

Study population:

Ninty nine patients attending labor word to undergo cesarean section will be recruited in this study.

Inclusion criteria:

1. Maternal age: 20-35 years old.
2. Term pregnancy.
3. Pfannenstiel incision.

Exclusion criteria:

1. Major maternal medical problem.
2. Any associated procedure e.g. subcuticular drain.
3. Bleeding disorders patients.
4. Drugs addiction.
5. Proven allergy to drug used in study.