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Remifentanil Versus Fentanyl for Patient Controlled Analgesia in labour

Thesis

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INTRODUCTION

Many women regard labour as the most extreme painful experience in their lives. This experience forced upon them by their sex that means they must undergo such an experience in order to get children. But instead of offering comfort and support, many popular socio-cultural beliefs, and even religions reinforce the worst fears of these women with stories of pain and misery.

Of course, labour pain can result in failure of progression of labour which can cause maternal exhaustion and/or foetal distress. Also, the personal experience of extreme pain during labour or delivery is related to the occurrence of postnatal depression **(Hiltunen *et al.*, 2004 and Ferber *et al.*, 2005).**

So, there are very good reasons for effective management of labour pain, as the fact that some women may feel the necessity for labour analgesia (**Kannan *et al.*, 2001).**

Luckily, there are variety of techniques which have been developed over the years to soften the pangs of childbirth; for example: psychoprophylaxis, transcutaneous electrical nerve stimulation (TENS), entonox, etc.

Many women derive considerable psychological benefit from antenatal preparations. Even so, not all women and births are the same, and for some women labour pains are unexpectedly worse than they can conceive or endure (**Keirse *et al.*, 1989**).

In TENS, electrodes are applied to the back of the women, and electrical pulses stimulate sensory nerves, blocking the pain gating systems in the spinal cord. But regardless of how wonderful this sounds, this technique is insufficiently effective for many women(**Bundsen *et al.*,1981**).

Many women find that entonox is an unsatisfactory analgesic for established labour **(Carstoniu *et al.*, 1994)**, and some are unable to use it effectively because of induced nausea and vomiting. Nitrous oxide may pose a risk to personnel working in areas where it is used for long periods of time without adequate scavenging facilities **(Ahlborg *et al.*, 1996)**.

Although, IM meperidine is the most common method of providing labour analgesia **(Rawal and Allvin, 1996).** Yet, its effectiveness is limited **(Ranta *et al.*, 1994)**, and it is associated with many harmful fetal and neonatal effects **(Kariniemi *et al.*, 1981).**

Epidural blockade is known to be effective and safe in labour pain treatment. There are, however, situations when it is contraindicated, for example infections or bleeding disorders. In many hospitals, anaesthesia services and epidural blockade are not available 24 hr a day. Also, it has been suggested that

epidural blockade in labour is associated with increased maternal intrapartum fever and neonatal sepsis requiring antibiotic treatment **(Lieberman *et al.*, 1997)** Therefore, alternatives for labour analgesia are needed.

Patient-controlled analgesia (PCA) techniques are not new to obstetrics: PCA is the standard delivery system for Entonox, Meperidine (**Evans *et al.*, 1976**), butorphenol tartrate (**Vogelsang and Hayes 1991**), tramadol (**Lewis *et al.*, 1997**), nalbuphine (**Frank *et al.*, 1987**) and fentanyl (**Roseag *et al.*, 1992**).

Remifentanil is a novel, ultra short-acting esterase metabolized synthetic opioid. It is a selective mu opioid agonist and has an ester linkage rendering it susceptible to rapid metabolism by non-specific blood and tissue esterases. **(Michelsen and Hug 1996).** It is an ideal drug for the intermittent painful contractions of labour (**Kan *et al.*, 1998**).

These characteristics may make remifentanil a suit-able drug for use in a patient-controlled analgesia system (PCA), with or without a background infusion, for analgesia in labour where severe pain occurs at intervals and rapid recovery between contractions and after delivery is desirable (**Harbers *et al.*, 2008**).

AIM OF THE WORK

The aim of the work was to compare remifentanil with fentanyl for intravenous (I.V.) patient controlled analgesia (PCA) in Labour and to evaluate its safety on the delivered babies.

LIST OF FIGURE

LIST OF TABLES

CONTENTS