Revista Colombiana de Anestesiología
Colombian Journal of Anesthesiology
www.revcolanest.com.co

Scientific and Technological Research

Remifentanil vs. epidural analgesia for the management of acute pain associated with labour. Systematic review and meta-analysis☆

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ARTICLE INFO

Article history:
Received 12 August 2012
Accepted 27 May 2014
Available online 20 July 2014

Keywords:
Labor, obstetric
Anesthesia, conduction
Meta-analysis
Acute pain
Analgesics, opioid

ABSTRACT

Introduction: Remifentanil has an attractive pharmacological profile for use in obstetric analgesia as a technique for mass application, with similar benefits and satisfaction as epidural analgesia.
Objective: To assess the efficacy, equivalence and safety of remifentanil vs. epidural analgesia in obstetrics.
Methods: Systematic review and meta-analysis of clinical trials using the Cochrane methodology.
Results: No equivalence was found in relation to epidural analgesia; however, efficacy was found in the remifentanil group at different time points during the evaluation. The incidence of adverse effects was similar in the two groups, except for nausea.

☆ Please cite this article as: González Cárdenas VH, González FDM, Barajas WJG, Cardona AM, Rosero BR, Manrique AJ. Remifentanil vs. analgesia Epidural para manejo del dolor agudo relacionado con el trabajo de parto. Revisión sistemática y meta-análisis. Rev Colomb Anestesiol. 2014;42:281–294.
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Conclusions: Remifentanil is not equivalent to epidural analgesia but could certainly decrease the intensity of pain.

Remifentanilo vs. analgesia epidural para el manejo del dolor agudo relacionado con el trabajo de parto. Revisión sistemática y meta-análisis

Palabras clave:
Trabajo de Parto
Anestesia de Conducción
Meta-análisis
Dolor agudo
Analgésicos opioides

RESUMEN

Introducción: El remifentanilo presenta un perfil farmacológico atractivo para definirse como analgesia obstétrica, dada la necesidad de una técnica de empleo masivo, con similares beneficios y satisfacción que la analgesia epidural.

Objetivo: Evaluar la eficacia, la equivalencia y la seguridad del remifentanilo vs. Analgesia epidural en analgesia obstétrica.

Métodos: Revisión sistemática y meta-análisis de experimentos clínicos siguiendo la metodología Cochrane.

Resultados: No hallamos equivalencia con respecto a analgesia epidural, pero sí eficacia en el grupo de remifentanilo a diferentes horas de evaluación. La incidencia de efectos adversos fue similar en ambos grupos, salvo para las náuseas.

Conclusiones: El remifentanilo puede no ser equivalente a la analgesia epidural, pero podría disminuir la intensidad del dolor consonante con los niveles de satisfacción de cada artículo.

Introduction

Lumbar epidural analgesia is considered the gold standard in the treatment of labour-associated pain due to its effectiveness and low frequency of adverse effects.[1–4] However, its use is restricted in patients with absolute contraindications and in those who refuse to receive it because of its invasive nature and its potential complications.[5–7] Consequently, various authors have written about the need for an equivalent option for patients who cannot benefit from its application.

The use of opioids intravenously or in regional techniques during labour is quite controversial because, on the one hand, they induce respiratory depression in the mother and, on the other hand, because of potential respiratory, cardiovascular and tissue perfusion complications in the newborn.[8–10] Over the past decade, the massive use of the potent opioid remifentanil in anaesthesia[11,12] has given rise to multiple reviews and editorials highlighting the strong profile of this drug for the control of pain during labour.[13] However, due to the low epidemiological power of this work, no recommendation has been structured. In 2008, after the publication by Volmanen et al.[14] a whole new experimental stage was set in motion for assessing the efficacy of remifentanil and its equivalence with epidural analgesia.

The goal of this study is to establish the equivalence in terms of efficacy and safety of intravenous remifentanil compared to epidural analgesia for the treatment of acute pain in labour, and to suggest a recommendation in this regard. The method to achieve this objective was a systematic review and meta-analysis. The question proposed to achieve this objective was: *Is remifentanil as effective and safe as epidural analgesia for labour-associated pain?*

Methods

Analytical study with a systematic review design and meta-analysis of randomized clinical trials controlled with epidural analgesia, conducted in accordance with the Cochrane collaboration methodology[15] and pursuant to the recommendations of the PRISMA Declaration.[16] The evaluation was performed using the R-Amstar tool.[17]

Selection criteria

Studies: Randomized clinical trials controlled with epidural analgesia.

Patients included: Women in labour with an indication for obstetric analgesia.

Interventions:

Two groups were defined as follows:

Remifentanil group: Patients assigned to analgesic intervention with intravenous remifentanil, irrespective of the specific technique used (patient controlled analgesia – PCA – or infusion, or combined PCA and infusion).

Epidural group: Patients assigned to analgesic intervention with epidural analgesia, irrespective of the specific technique used (patient controlled epidural analgesia – PCEA – or infusion, or combined PCEA and infusion).

Outcomes:

Pain: Assessment of pain intensity using the visual analogue scale (VAS) from 0 to 10, summarized as means and standard