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SCIENTIFIC ARTICLE

Combined spinal–epidural analgesia in labour: its effects on delivery outcome

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KEYWORDS
Combined spinal–epidural;
Labour analgesia;
Foetal outcome;
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Abstract
Background and objectives: Combined spinal–epidural (CSE) has become an increasingly popular alternative to traditional labour epidural due to its rapid onset and reliable analgesia provided. This was a prospective, convenient sampling study to determine the effects of CSE analgesia on labour outcome.
Methods: One hundred and ten healthy primigravida parturients with a singleton pregnancy of ≥37 weeks gestation and in the active phase of labour were studied. They were enrolled to the CSE ($n = 55$) or Non-CSE ($n = 55$) group based on whether they consented to CSE analgesia. Non-CSE parturients were offered other methods of labour analgesia. The duration of the first and second stage of labour, rate of instrumental vaginal delivery and emergency cesarean section, and Apgar scores were compared.
Results: The mean duration of the first and second stage of labour was not significantly different between both groups. Instrumental delivery rates between the groups were not significantly different (CSE group, 11% versus Non-CSE group, 16%). The slightly higher incidence of cesarean section in the CSE group (16% versus 15% in the Non-CSE group) was not statistically significant. Neonatal outcome in terms of Apgar score of less than 7 at 1 and 5 min was similar in both groups.
Conclusion: There were no significant differences in the duration of labour, rate of instrumental vaginal delivery and emergency cesarean section, and neonatal outcome in parturients who received compared to those who did not receive CSE for labour analgesia.
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PALAVRAS-CHAVE
Combinação raqui-peridural;
Analgesia de parto;
Resultado fetal;
Duração do parto

Analgesia combinada raquiperidural em trabalho de parto: seus efeitos sobre o desfecho do parto

Resumo
Justificativa e objetivos: A analgesia combinada raquiperidural (RP) tornou-se uma alternativa cada vez mais popular para o trabalho de parto tradicional devido ao seu rápido início de ação e analgesia confiável. Este foi um estudo prospectivo de amostragem conveniente para determinar os efeitos da RP sobre o desfecho do parto.
Métodos: Cento e dez parturientes primigestas saudáveis, com gestação única de $\geq$ 37 semanas de gestação e na fase ativa do trabalho de parto foram incluídas. As pacientes foram designadas para os grupos RP (n = 55) ou não-RP (n = 55) com base em seus consentimentos para a analgesia combinada RP. As parturientes do grupo não-RP receberam outros métodos de analgesia para o parto. As durações do primeiro e segundo estágio do trabalho de parto, as taxas de parto vaginal instrumental e cesariana de emergência e os escores de Apgar foram comparados.
Resultados: A média de duração do primeiro e segundo estágio do trabalho de parto não foi significativamente diferente entre os dois grupos. As taxas de parto instrumental não foram significativamente diferentes entre os grupos, grupo RP (11%) versus grupo não-RP (16%). A incidência ligeiramente maior de cesariana no grupo RP (16% versus 15% no grupo não RP) não foi estatisticamente significativa. O desfecho neonatal em termos de índice de Apgar inferior a 7.
Conclusão: Não houve diferenças significativas em relação à duração do trabalho, às taxas de parto vaginal instrumental e cesariana de emergência e ao desfecho neonatal em parturientes que receberam RP para analgesia de parto em comparação com aquelas que não receberam.
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Introduction

Labour pain is one of the most distressing types of pain a person may have to endure. The American College of Obstetricians and Gynaecologists has suggested that: ''*Labour results in severe pain for many women. There is no other circumstance where it is considered acceptable for a person to experience severe pain, amenable to safe intervention, while under a physician's care*''.[1] More women nowadays are opting for pain relief methods during labour. Epidural analgesia has gained increasing popularity worldwide as a result of its ability to provide analgesia which is more superior to other methods of pain relief.

Controversy exists however, concerning its effect on the course and outcome of labour. As a result of this, considerable research has been performed and findings have led to changes in practice. Epidural analgesia has been previously implicated in prolonging labour, increasing oxytocin requirements, as well as increasing instrumental and operative delivery rates. However, there is increasing evidence which refutes some of these claims.[2]

Combined spinal–epidural (CSE) has become an increasingly popular alternative to the traditional epidural. The local anaesthetic–opioid combination administered intrathecally provides rapid-onset, potent and reliable analgesia, with minimal motor blockade during the first stage of labour, enabling maternal mobility, and resulting in greater maternal satisfaction.[3,4] A recent study comparing the CSE technique to traditional epidural analgesia showed that, although both techniques were excellent analgesic options, CSE provided significantly faster and better pain relief during the first stage of labour.[5]

Numerous studies comparing epidural and CSE or epidural and non-epidural analgesia have shown variable results, but none have compared CSE with other methods of labour analgesia.[6–8] In the Cochrane database of systematic reviews in 2011 comparing epidural versus non-epidural or no analgesia in labour, CSE was included together with epidural analgesia and not as a separate entity. In view of the above, we decided to look at the effect CSE had on labour outcome compared with alternative methods of labour analgesia. Our endpoints were duration of the active phase of the first and second stages of labour, rate of instrumental vaginal delivery and emergency cesarean section, and neonatal outcome.

Methods

This prospective, convenient sampling study was conducted after obtaining institutional ethics approval. A total of 110 parturients of American Society of Anesthesiology (ASA) I physical status was enrolled in this study after informed consent was obtained. The parturients were primigravid, aged between 20 and 40 years with a singleton pregnancy of $\geq$37 weeks gestation and in the active phase of labour with cervical dilatation of 3–4 cm. Any parturient with pregnancy related illness or contraindications to CSE analgesia was excluded from this study.

The parturients were first examined by the obstetric team in the ward. A detailed obstetric history was taken and cephalic foetal presentation confirmed by a scan. When the

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