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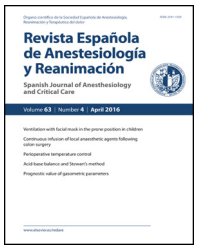

ORIGINAL ARTICLE

# Analysis and evaluation of the effectiveness of epidural analgesia and its relationship with eutocic or dystocic delivery☆

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**KEYWORDS**
Epidural anaesthesia;
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Dystocia;
Pain

**Abstract**
*Objective:* Numerous studies have demonstrated the difference in the verbal rating scale with regard to obstructed labour and induced labour, so that obstructed labour and foetal macrosomia have been related to a greater sensation of pain during labour, particularly in the first stage. Even the epidural analgesia is linked to the need for instrumented or caesarean section due to foetal obstruction. The goal of the study is to analyse and evaluate the effectiveness of epidural analgesia in normal versus obstructed labour.
*Patients and methods:* One hundred and eighty pregnant women were included in an observational, analytical, longitudinal and prospective study, that was performed in the Obstetrics Department of the Hospital Universitario Dexeus. All the nulliparous or multiparous over 36 weeks of pregnancy, after 3 cm of cervical dilatation in spontaneous or induced labour were included. All the patients were given epidural analgesia according to protocol.
*Results:* The basic descriptive methods were used for the univariate statistical analysis of the sample and the Mann–Whitney *U* test was used for the comparison of means between both groups. The correlations between variables were studied by means of the Spearman coefficient of correlation. The differences regarded as statistically significant are those whose $p < 0.05$.
*Conclusion:* In our population there were no statistically significant differences in the effectiveness of epidural analgesia in normal versus obstructed labour. Patients who got epidural analgesia and had obstructed labours have the same degree of verbal rating scale as patients that do not had obstructed labours ($p > 0.05$).


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**PALABRAS CLAVE**
Anestesia epidural;
Embarazo;
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Distocia;
Dolor

**Análisis y evaluación de la efectividad de la analgesia epidural y su relación con el parto eutócico o distócico**

**Resumen**
*Objetivo:* Numerosos estudios han demostrado mayor puntuación en la escala verbal nominal del dolor en relación con el parto distócico y la inducción médica del parto, de manera que el parto distócico y la macrosomía foetal se han relacionado con una mayor sensación de dolor durante el parto, sobre todo en el primer estadio. Incluso la analgesia epidural se ha vinculado al parto instrumentado y a la cesárea. El objetivo del estudio fue analizar y evaluar la efectividad de la analgesia epidural en el parto distócico frente al parto eutócico.
*Pacientes y métodos:* Se diseñó un estudio observacional, analítico, longitudinal y prospectivo, en el Área Obstétrica del Hospital Universitario Dexeus. Se incluyeron 180 gestantes. Fueron incluidas todas las nulíparas o multíparas con edad gestacional superior a 36 semanas, más allá de 3 cm de dilatación cervical y en trabajo de parto espontáneo o inducido. Todas las pacientes recibieron la analgesia epidural según protocolo.
*Resultados:* Para el análisis estadístico univariante de la muestra se emplearon los métodos descriptivos básicos y para la comparación de medias entre 2 grupos, el test U de Mann–Whitney. Las correlaciones entre variables se estudiaron mediante el coeficiente de correlación de Spearman. Las diferencias consideradas estadísticamente significativas fueron aquellas cuya $p < 0,05$.
*Conclusión:* En nuestra población, no hubo diferencias estadísticamente significativas en la efectividad de la analgesia epidural en el parto eutócico frente al distócico. Las pacientes que recibieron la epidural que tuvieron partos distócicos presentaron la misma puntuación en la escala verbal nominal del dolor que aquellas que presentaron parto eutócico ($p > 0,05$).


## Introduction

Childbirth pain is an acute pain with a well-defined beginning and end and high individual variability. Numerous studies[1] have demonstrated the severity of pain during labour, corroborating that pain intensity is high, much greater than that associated with non-terminal cancer, arthritis, post-herpetic neuralgia and/or dental problems. Labour pain presents 3 different patterns: abdominal pain associated with the contractions, pain in the lower back region, also associated with the contractions, and a continuous pain in the lower back region. The first 2 types vary in intensity as labour progresses, and the last type is more intense, with no major changes occurring over the course of labour.[2] The pain experienced by pregnant women presents visceral and somatic characteristics that will vary at different stages of labour. This pain is probably the greatest pain a woman will ever experience,[3] and is the reason why proper pain management is an essential part of good obstetric care.[4] Epidural analgesia is the safest and most effective technique, and is the gold standard in pain management during this period. Childbirth is the culmination of pregnancy, which ends with the expulsion of the foetus from the uterus. Childbirth, or labour, comprises 4 stages or periods: stage I, the dilation period, stage 2, the foetal expulsion period, stage 3, the placenta delivery period, and stage 4, the post-partum period.

Obstructed labour is also known as labour dystocia. There are 2 types of obstructed labour[5]: dynamic and mechanical. Dynamic obstructed labour refers to defective, ineffective or inappropriate uterine activity to achieve cervical dilation and/or the descent of the foetus. Normal uterine dynamics are defined by a frequency of 3–5 contractions every 10 min, at an intensity of between 30 and 50 mmHg, and a duration of 30–90 s, with baseline tone always maintained between 8 and 12 mmHg. The other type of obstructed labour is mechanical, either due to an alteration of the birth canal (alterations in pelvic size, form or inclination that may block delivery), an alteration in the soft pelvis, cervix, vagina, vulva or perineum (the most frequent cause would be the cervix), or dystocia due to abnormal presentation (buttocks), abnormal situation, deflected foetal head or foetal position abnormalities. The appearance of pain during labour is linked to the onset of uterine contractions and to changes in the distensible structures of the birth canal that take place during the dilation and descent phases.

No differences according to ethic group or race have been found with regard to the verbal rating scale (VRS) used to assess epidural analgesia. However, VRS scores are higher in obstructed labour and induced labour,[6] so that obstructed labour and foetal macrosomia have been related to a greater sensation of pain during labour, particularly in the first stage.[7] Moreover, the use of epidural analgesia has also been traditionally associated with obstructed labour.[8] Several studies have shown that the duration of both labour and the actual birth, as well as the need for instrumented or caesarean section due to foetal obstruction, were greater in patients with epidural analgesia.[9] Nevertheless, this is a