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Original Contribution

## Survey of nulliparous parturients' attitudes regarding timing of epidural analgesia initiation

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## ABSTRACT

**Study objective:** At our hospital, although >90% of nulliparous parturients eventually choose epidural analgesia for labor, many delay its initiation, experiencing considerable pain in the interim. This survey probed parturients' views about the timing of initiation of epidural labor analgesia.

**Design:** Single-center, nonrandomized quantitative survey.

**Setting:** Labor and delivery suite in a large tertiary academic medical center.

**Patients:** Two hundred laboring nulliparous women admitted to the labor and delivery suite.

**Interventions:** After their pain was relieved, parturients completed a questionnaire regarding their decision to request labor epidural analgesia.

**Measurements:** A variety of factors regarding epidural use were assessed including the influence of painful contractions and of childbirth education class attendance on the decision to request epidural analgesia, and parturients' perception of the timing of epidural initiation on the progress and outcome of labor.

**Main results:** Analysis revealed that the desire of parturients to use epidural analgesia was increased from 27.9% before the onset of painful contractions to 48.2% after ( $p < 0.01$ ). Two-thirds of participants attended a non-physician taught childbirth education class. An antepartum plan to definitely forgo an epidural was 1.8 times more likely among women who attended a childbirth class when compared to those who did not attend. (OR = 1.8; 95%CI: 1.1–3.1;  $p = 0.04$ ). The most common views affecting decision-making were that epidural analgesia should not be administered "too early" (67.5%), and that it would slow labor (68.5%). Both of these views were more likely to be held if the parturient had attended a childbirth class, OR = 2.0 (95%CI: 1.1–3.8;  $p = 0.03$ ) and OR = 2.0 (95% CI: 1.1 to 3.7;  $p = 0.03$ ), respectively.

**Conclusions:** We found that nulliparous parturients have misconceptions about epidurals, which are not supported by evidence-based medicine. Moreover, we found that attendance at childbirth education classes was associated with believing these misconceptions.

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## 1. Introduction

The pain of labor is viewed differently than other types of pain. While surgical patients are managed with analgesics to decrease pain and the potential for medical complications, the use of epidural analgesia to relieve the pain of labor still generates considerable controversy. Although for most women childbirth is the most intense pain that they will ever experience [1], many parturients and others believe in delaying or foregoing pharmacologic pain relief for labor and delivery [2].

Our hospital is a tertiary care center with 6000 deliveries per year. The deliveries are performed exclusively by obstetricians, and our patient population is, on average, from a relatively high socioeconomic class (private payer to Medicaid ratio, 9 to 1). >90% of our nulliparous parturients choose epidural analgesia to relieve their labor pain. Many, however, delay their request for epidural analgesia, initially enduring hours of pain, even those receiving i.v. oxytocin for labor induction or undergoing artificial rupture of membranes. Toledo et al. [3] recently used qualitative methodology to survey attitudes among parturients regarding their plan for neuraxial analgesia. The authors found that many women base their decision to opt out of epidural analgesia on misunderstandings of the risks involved and concluded that improved patient education may help to address this issue. We designed this quantitative study to focus specifically on nulliparous women who decided to use epidural analgesia. Our aim was to determine their attitudes regarding the timing of initiation of epidural analgesia. Secondary outcomes were to examine the influence of childbirth education classes on those

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attitudes, and the impact that actually experiencing labor pain had on their plans. We hypothesized that nulliparous women would delay their request for epidural analgesia as a result of lack of understanding of relevant evidence-based medicine.

## 2. Materials and methods

A questionnaire about epidural analgesia for laboring nulliparous women was approved by the New York University School of Medicine Institutional Review Board. English-speaking nulliparous parturients, admitted in labor or scheduled for induction of labor, and who were in pain requested epidural analgesia were eligible to participate in this study. Exclusion criteria included multiparity, epidural analgesia not requested, and pain not relieved after epidural analgesia initiated. In our Labor and Delivery unit, every patient receives a pre-anesthetic visit by a member of the anesthesia care team as soon as practicable after admission. We do not use a standard script, but we discuss the risks and benefits of epidural analgesia and answer questions. We perform a history and a physical exam and obtain written informed consent. After their labor pain was relieved, oral consent to participate in the study was obtained by one of the investigators using a standard IRB-approved script, patients were asked to answer a series of questions in writing regarding epidural analgesia. Questions included the degree of pain experienced before and after epidural analgesia was initiated (VAS, visual analog scale, 0–10 cm, consisting of a straight line marked on either end with “no pain” and “worst pain imaginable”), influence of painful contractions on the decision to request epidural analgesia, childbirth education class attendance, and the perception of class bias regarding epidural analgesia (Appendix A). The survey also included 12 specific factors that may have influenced the decision to request epidural analgesia, using a 5-point Likert-type scale from strongly disagree to strongly agree (Fig. 1).

Patients were assured that their participation was not required and that their anonymity would be maintained. The study was completed when 200 surveys were collected.

### 2.1. Statistical analysis

Normality was tested using the Shapiro Wilk test. Within-group comparisons were analyzed using Wilcoxon signed-rank test for continuous data and McNemar test for proportions. Likert-type data was analyzed using Wilcoxon rank-sum test. Ordinal and simple logistic regression was also used to assess the effect of childbirth education class attendance on the likelihood of requesting epidural analgesia before painful contractions started, decision making in terms of timing of the request for epidural analgesia, and the perceived effects epidural analgesia on the progress of labor. For all models, the independent variable was childbirth education class attendance, and the dependent variable was the outcome assessed. Results were expressed as median (interquartile range, IQR), or odds ratio [95% confidence interval (CI)], unless otherwise stated. A two-sided  $P$ -value of  $<0.05$  was considered significant. All analyses were performed with STATA/SE version 12.1 (StataCorp LP, College Station, TX).

## 3. Results

We approached 214 parturients in order to collect 200 completed questionnaires (89% participation rate). Pain VAS declined from 7.3 (6.3–8.4) before epidural to 0.5 (0–1.1) after epidural ( $p < 0.01$ ). The effect of the onset of painful uterine contractions on the desire for epidural analgesia is illustrated in Fig. 2. The intention of the participants in the aggregate to definitely use epidural analgesia (“I was sure I wanted an epidural”) increased from 27.9% before painful contractions began, to 48.2% after the onset of painful contractions ( $p < 0.01$ ). Within group analysis showed that among subjects who definitely planned to use epidural analgesia, the onset of painful contractions caused only two subjects (3.6%) to change their attitude to delay it, 32 subjects (37%) from delaying epidural analgesia to definitely wanting it, and 24 subjects (57%) from being not sure about epidural analgesia to delaying it. On the other hand, among parturients who had decided prior to the onset of painful contractions not to use epidural analgesia (16 subjects), only five (31.3%) maintained this intention after painful contractions

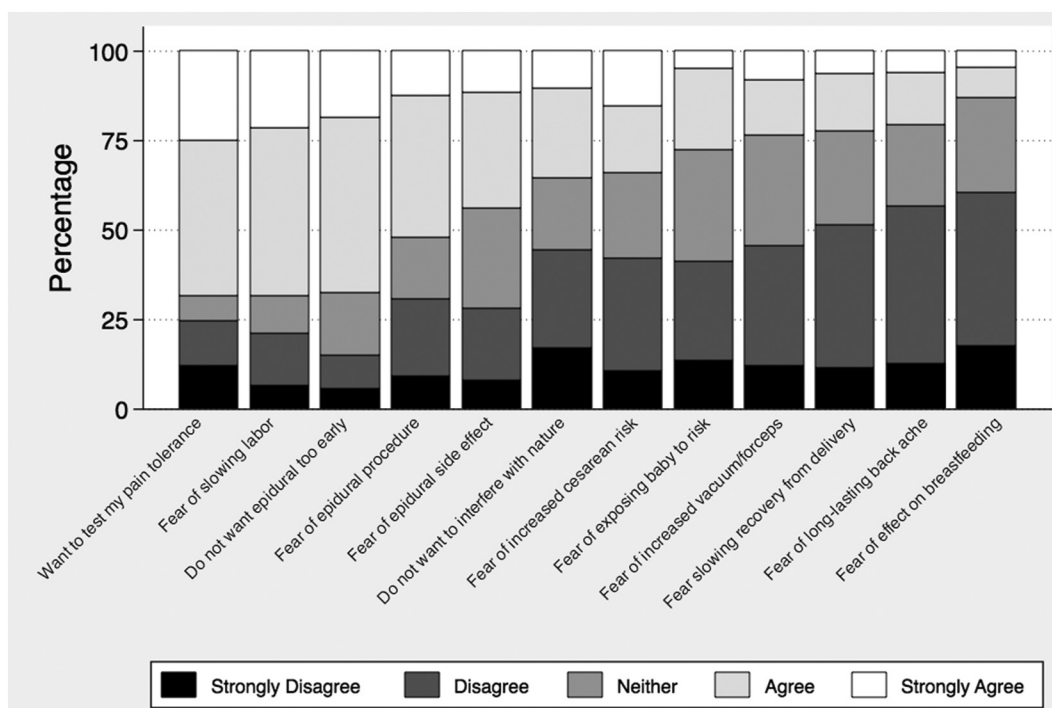


Fig. 1. Specific factors probed that affected choosing epidural analgesia.

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