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**ORIGINAL ARTICLE**

# Awareness, knowledge and attitude about labor analgesia among providers and parturients; a survey based study

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## ABSTRACT

**Background & Objectives:** American College of Obstetricians and Gynecologists (ACOG) and American Society of Anesthesiologists (ASA) state that 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. In our country the practice of providing adequate pain relief during labor is confined to a handful healthcare institutions. We conducted this survey based study to assess the awareness, knowledge and attitude of pregnant women, obstetricians and anaesthesiologists about labor analgesia and to identify the barriers to widespread utilisation of labor analgesia in Puducherry, India.

**Methodology:** A questionnaire about their experience and practice, concerns and barriers in practice of labor analgesia was distributed to anesthesiologists and obstetricians working in medical colleges including the postgraduates and private hospitals in Puducherry, India and their responses were collected. A different set of questionnaire regarding awareness of labor analgesia and its effects was prepared in English and in local language and distributed to antenatal mothers attending the antenatal clinic and their responses were collected.

**Results:** 60% providers had awareness of labor analgesia, but contributed to only 10% of their practice. Epidural analgesia was the first choice by anesthesiologists, and parenteral drugs the choice for obstetricians out of which tramadol was the favorite. Both obstetricians and anesthesiologist had fears of increased incidence of instrumental vaginal delivery, more time to be devoted and procedure related risks. Obstetrician felt the non-availability of anesthesiologist as the main barrier while prolongation of period of labor was a factor for the anesthesiologists. 40% parturients were aware about severity of pain and 79% wished for painless labor. However 49% had fears regarding ill effects to baby, 82% regarding backache and 52% regarding extra expenses for the epidural kit and the services.

**Conclusion:** Anesthesiologists and obstetricians are willing to provide labor analgesia provided parturients demand for it and because of their concerns and hindrance factors they contribute very less to their practice. Parturients wishes for painless labor but fear of backache, effect on baby and extra cost for the procedure prevent them from request for labor analgesia.

**Key words:** Labor; Labor pain; Labor analgesia; Parturient; Epidural analgesia; Barriers; Survey

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## INTRODUCTION

In modern world standard obstetric care in a country is reflected by the availability and acceptance of analgesia for labor. Data from maternity care in NHS in England shows that 93% parturients received pain relief for labor.[1] Although many nonpharmacological and pharmacological methods are available, epidural technique is considered the gold standard for labor analgesia (LaA). In developed countries, 51% of parturients receive epidural analgesia (EA) at hospitals performing at least 1,500 deliveries annually. In France, 75% and at Lucile Packard Children's Hospital, California approximately 80% of women received EA.[2]

Many surveys showed that parturients considered labor pain as one of the most severe forms of pain.[3,4] But they did not demand pain free labor due to lack of awareness of LaA practice[4,5] and healthcare providers too were not keen to provide pain relief because of their concerns.3 The awareness of ill-effects of unrelieved pain during labor and good effects of LaA is still lacking among stakeholders in our country, where only very few centers run a comprehensive LaA program with good acceptance rate. We conducted this survey in antenatal mothers as well as in obstetricians and anesthesiologists of Puducherry to find out the level of awareness, knowledge and attitude among them and the practice of LaA.

## METHODOLOGY

This was a descriptive, multicenter, questionnaire based study done on obstetricians and anesthesiologist in medical colleges and private hospitals in Pondicherry, India, during August-December 2016. A questionnaire containing same set of structured questions was designed for anesthesiologists and obstetricians, based on their designation, experience, practice of LaA, their views on benefits, concerns, barriers and preferred mode of LaA. A different questionnaire was prepared for antenatal mothers in which the essential components included parturient background, awareness of pain relief with pharmacologic and nonpharmacologic agents, and the use of these for the relief of labor pains. After obtaining institutional ethical committee approval, forms were distributed to all medical colleges. The questionnaire prepared for antenatal mothers were distributed in the antenatal out-patient department for a period of three months. The filled forms were collected and data were compiled. Data were entered into Microsoft excel and statistics was analyzed using SPSS for Windows (SPSS v15. SPSS Inc, Chicago, IL). We did not compare the groups and statistics was done only by percentage.

## RESULTS

One hundred and seventy questionnaires were distributed to anesthesiologists and an equal number to obstetricians; 112 (out of 170) anesthesiologists and 124 obstetricians (out of 170) responded. The response rate of 65% and 72% respectively. Antenatal mothers who attended antenatal clinic 450 were willing to participate and 389 answered the questionnaire completely; response rate 88.4%.

Gender distribution, experience of the providers, mode of LaA are presented in Table 1.

Demographic data of antenatal mothers are depicted in Table 2.

**Table 1: Experience of the providers and their practice of labor analgesia**

| Respondents | Anesthesiologist | Obstetrician |
|---|---|---|
| Male: female | 75% : 25% | 11% : 89% |
| Experience <5years | 73% | 75% |
| 5-15 years | 16% | 7% |
| >15years | 11% | 16% |
| Clinicians practising labor analgesia | 71.6% | 78% |
| Epidural as first mode choice for labor analgesia | 77% | 13% |
| Parental drug as choice of labor analgesia | 17% | 62% |

**Table 2: Demographic profile of antenatal mothers**

| Parturients | Parameter | Results (%) |
|---|---|---|
| Age (years) | 18-25 | 40 |
| | 25-30 | 48 |
| | >30 | 12 |
| Literacy | 10th std | 36 |
| | 12th std | 14 |
| | graduate | 50 |
| Residency | village | 63 |
| | town | 34 |
| | city | 3 |
| Parity | prima | 60 |
| | second | 34 |
| | multi | 6 |
| Occupation | housewife | 12 |
| | working | 88 |

**Table 3: Questionnaire answered by antenatal mothers**

| S. No | Headings | Questions | Yes (%) |
|---|---|---|---|
| 1 | Labor pain | Awareness about labor pain | 48 |
| | | Nature of labor pain, severe | 40 |
| | | Labor pain should be relieved | 79 |
| 2 | Painless labor methods | Aware of labor pain relief methods | 30 |
| | | Epidural analgesia is inserting a catheter at the back to give pain relieving drugs | 48 |
| | | Had previous exposure to epidural anesthesia/analgesia | 31 |
| | | Epidural catheter insertion is more painful than labor pain | 35 |
| 3 | Effects of epidural labor analgesia | EA increase the risk for instrumentation | 70 |
| | | epidural labor analgesia will affect your baby | 49 |
| 4 | Concerns | Fear of backache | 82 |
| | | Extra expense is preventing them | 51 |
| 5 | Feedback | Will you recommend labor analgesia to your friends | 68 |
| | | What mode of analgesia do you recommend Epidural | 38 |

Parturients response regarding labor pain, painless labor methods, labor EA effects and concerns are presented in Table 3.

84% anesthesiologist and 75% of obstetricians responded that they were willing to encourage and provide LaA for demanding parturient. 91% of obstetricians and anesthesiologist wished to start LaA unit given an opportunity.

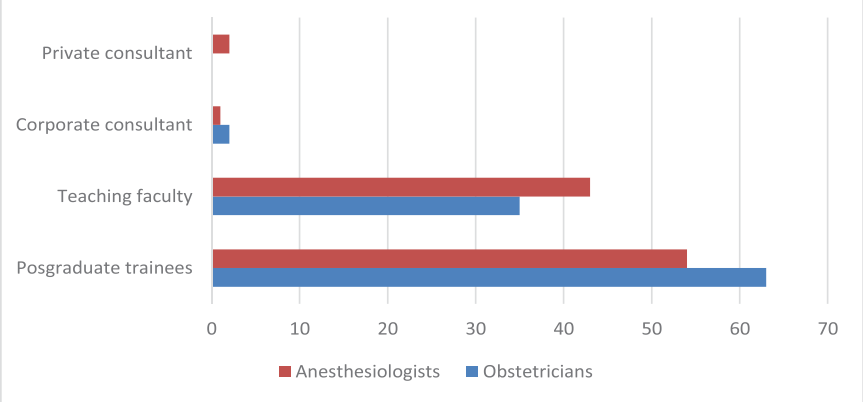


**Figure 1: Distribution of anesthesiologists and the obstetricians based upon their status [Data shown as %]**

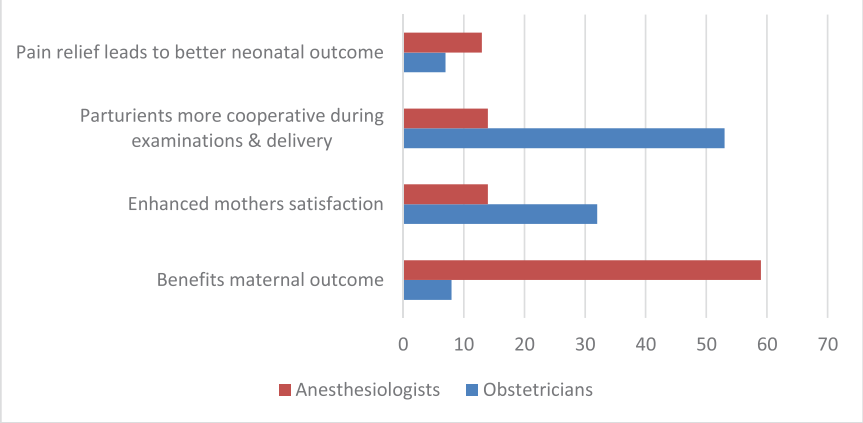


**Figure 2: Beliefs by anesthesiologists and the obstetricians regarding benefits of labor analgesia [Data shown as %]**

## DISCUSSION

The experience of pain in labor is unique for each woman and the attitude toward LaA may also be influenced by a woman's uprising, culture, ethnic group, age and peer pressure. On analyzing the factors influencing the perception of pain in our study most of the antenatal mothers were residing in village and town where conservative ideas and traditional methods are still followed. Senden et al.[6] did a survey between the Dutch and American parturients and found Dutch birth participants had a deep seated conviction that woman body knows best and given time nature will take its course but American women characterize as medical event and expect labor pain to be severe and received medictions for the relief of

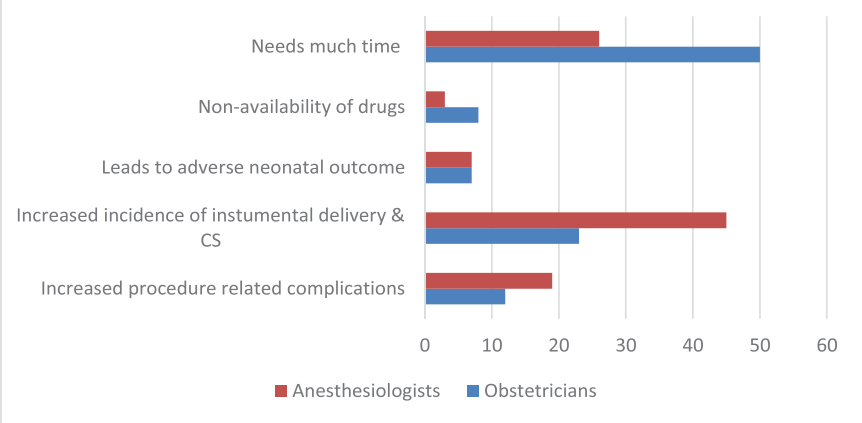


**Figure 3: opinions by anesthesiologists and the obstetricians regarding barriers to labor analgesia [Data shown as %]**

pain. 50% parturients were aware about labor pain and 40% felt that labor pain is severe similar to Poomalar et al. 4 and Hussain et al.3 But 70% of them were not aware about LaA similar to study by Hug et al.[7]

Influencing factors for acceptance of LaA were analyzed. All our participants were literate with tenth grade and above and 88% of them were working. Survey done by Shrestha et al.[8] showed that with higher education the pain perception. Interestingly 79% of our respondents wished for painless labor which indicates that education, occupancy are influencing factors for accepting LaA which is comparable to studies done by Sheiner et al.[9] and Oladokun et al.[10] Though we did not analyze partner preference, study done by Jennifer Harkins et al.[2] showed strong association between partner preferences and epidural use and suggested it as an important factor during counseling pregnant women with regard to their decision to have a labor epidural.

The ante-natal period is clearly an important time to give information about options for pain relief in labor. But they receive and rely on information from family, friends, newspapers or magazines and least commonly from medical health professionals[6,11] and information from these sources may be less accurate and misconceptions may arise. Unlike developed countries we still lack proper antenatal classes about nature of labor pain and modes of LaA and their uses and limitation. In our study though 70% told that they are not aware of LaA methods 48% were aware about EA and 46% of antenatal mothers got information from doctors. This awareness creation can be contributed to the effort taken by anesthesiology postgraduates who has epidural LaA as their dissertation. White et al. suggested that the use of an information card improved the recall of information given to women at a time of considerable distress.[12] It reinforces information given verbally and also available for the woman and her partner after insertion of the epidural for reference. However some women may reject information about EA, because they are planning childbirth without intervention as done by Naithani et al.[13] and Shindhya et al.[4]

Pondicherry has two government and six private medical colleges and 54% anesthesiologist and 63% obstetrician respondents were postgraduates and this would provide a clear picture about the awareness and attitude of young clinicians towards LaA. In our study 84% anesthesiologist and 75% obstetrician responded that they would provide LaA on parturient demand. Though more than 60% providers are practicing LaA, had provided to only 10% of their total number of labor patient which was similar to Hussain et al.[2] Very few private practitioners were involved in this survey who contributed to high percentage of practicing LaA similar to study done by Parthasarathy et al.[14]

Though the providers agree with the practice of LaA, the concept of its benefits differed grossly between them. Anesthesiologists felt that LaA will benefit the maternal outcome and produce satisfactory experience to mothers and for obstetricians it help the parturient to be more cooperative for vaginal examination and conduct of delivery.

Parturients' concerns regarding epidural LaA were due to various reasons; 49% of them had concerns about the bad effect of LaA on babies similar to an earlier study,15 51% had concerns about the additional expenditure on disposables, drugs and services, as shown by Liu et al.16 79% felt that procedural pain will be severe and nearly 80% of them opined that the technique will lead to backache,[17,18] which was similar to the results by Toledo et al.[19]

Parental concerns can be largely allayed and expectations made realistic if those directly involved in the provision or management of EA (e.g. anesthesiologists, obstetricians, general practitioners and midwives) are also active as resource personnel and educators. Our parturients wished for painless labor and would recommend their friends and relatives for the same; however, only 40% of them wanted EA during their labor.

The main concerns were common for the providers such as increased rate of instrumentation during delivery, more time to be devoted and procedure related risks. ACOG and ASA guidelines had resolved these concerns. Delayed pushing till parturient desires for pushing in second stage of labor has been advocated in parturients under neuraxial blockade for encouragement of passive rotation of fetal head and increasing incidence of spontaneous vaginal delivery. Involvement of trained staff for monitoring and top-up of EA under the guidance of anaesthesiologist also promote the practice of LaA.

Regarding barriers, the obstetricians felt that non-availability of anesthesiologist as their major factor which was similar to Bhuvaneswari et al.[20] Other factors such as prolongation of the labor, additional cost to the patients and higher incidence of instrumentation similar to study done by Hussain et al.[2] and cases done during odd hours also contributed for their hesitancy in practice.

Same reasons plus low monetary benifits[21] were the major hindrance factor for anesthesiologist. Majority of the abstainers had these reason to quote.

Anesthesiologist and obstetrician differed in their preferred modes of analgesia. In our study anesthesiologist preferred epidural as mode of LaA and the parenteral was for obstetrician. Obstetrician felt it easier to practice and tramadol was the drug most preferred similar to survey done by Parthasarathy et al. and Poomalar et al. In USA and UK parenteral opioids are used for 39-58% and 39% patients respectively for labor pain relief; common options being pethidine, tramadol, pentazocine, nalbuphine, butorphanol etc.[23] Meta-analysis of the randomized controlled trials shows that women in labor receiving EA rather than parenteral opioids are more comfortable during the first and second stage labor and are more satisfied with their analgesia.[24]

Majority of our healthcare respondents felt that LaA should be provided to all willing parturients and if patient demands they will encourage and provide epidural LaA. They wish to start LaA service given an opportunity and wish to spread the usefulness of labor EA among their colleagues. Demystifying the myths by propagating the benefits of LaA by the providers and setting up the delivery suites for delivering standard of care will increase the acceptance by the parturients and the practice of epidural LaA by healthcare professionals in our region.

## LIMITATIONS

Regression analysis was not done within the groups.

## CONCLUSION

According to the results of our study, healthcare providers differed in their preference on mode of labor analgesia. For the anesthesiologists, the barriers to wide-spread practice included concerns about increased chances of instrumental delivery, the need to spend more time, need for continual monitoring and low financial benefits. For the obstetricians, the main barriers were non-availability of anesthesiologist for epidural analgesia, the need to spend more time, and need for continual monitoring. Majority of them preferred parenteral route of analgesics for pain relief. However majority of the providers wished to practice labor analgesia if proper conditions are provided.

Antenatal mothers were aware of epidural labor analgesia but they preferred painless labor by means of parenteral mode because of their concerns about safety of the epidural technique for their neonates, chances of cesarean delivery, backache and extra cost. Health education regarding benefits of labor analgesia and setting up the delivery suites for delivering standard of care will increase the acceptance by the parturients and the practice of epidural anlgesia by healthcare professionals

**Conflict of interest:** None declared by the authors.

**Authors' contribution:**

RP: Concept, conduction of study, write-up

HK: Conduction of study, manuscript editing

RS: Manuscript guidance

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## Box 1: Questionnaire for the providers

1. **Specialty you belong:**
   a) Anesthesiologist
   b) Obstetrician

2. **What is your designation:**
   a) Postgraduate student
   b) faculty in teaching hospital
   c) consultant in corporate hospital
   d) private practice

3. **Years of experience:**
   a) <5years
   b) 5-10 years
   c) >10 years

4. **Gender:** Male/ Female

5. **Do you practice labor analgesia in your practice**
   a) Yes
   b) No

6. **What do you think are the good benefits of labor analgesia – (more than one option can be selected)**
   a) benefits maternal outcome
   b) satisfactory birth experience for the mother
   c) parturient will be very cooperative for examination and conduct of delivery
   d) with maternal pain relief neonatal outcome is also good

7. **Can you share the percentage of parturients receiving labor analgesia in your practice**
   a) Less than 10%
   b) 10-25%
   c) 25-40%
   d) 40-60%
   e) Above 60%

8. **To whom do you think labor analgesia should be provided or beneficial**
   a) All parturients who are willing
   b) Demanding parturients only
   c) High risk parturients only
   d) Educated parturients only

9. **Do you wish to spread the usefulness of labor epidural analgesia among your fellow obstetricians**
   a) Yes
   b) No

10. **At what stage would you like to establish labor analgesia**
    a) Early first stage
    b) Late first stage
    c) Second stage

11. **What will be your first choice mode of labor analgesia or you frequently practice**
    a) Parenteral drugs (IM/IV)
    b) Epidural
    c) Yoga therapy
    d) Entonox

12. **What is the drug you commonly use for intravenous and intramuscular analgesia during labor**
    a) Tramadol
    b) Pethidine
    c) Fortwin
    d) Ketamine

13. **What do you think is the main hindrance factor in practicing epidural labor analgesia (more than one answer can be selected)**
    e) non-availability of anesthesiologist
    f) prolongs the labor
    g) Additional cost/ less paid for the duration of work
    h) more incidence of instrumentation
    i) Case during odd hours

14. **If you do not wish to practice labor analgesia, what is your concern (more than one option can be selected)**
    a) It may increase the procedure related complications
    b) It increases the incidence of instrumentation and caesarean section
    c) It may lead to adverse neonatal outcome
    d) Non availability of drugs
    e) More time to be devoted

15. **What is the reason to prefer other form of analgesia**
    a) Benefits maternal outcome
    b) Helpful for trial of labor in high risk patients
    c) Easier method

16. **If patients demand for epidural labor analgesia, what will be your response**
    a) Encourage the patient and provide
    b) Discourage the patient by explaining the side-effects expected
    c) Advise them for other mode of analgesia
    d) Refer the patient to an institution

17. **Do you wish to start labor analgesia unit given an opportunity**
    a) Yes
    b) No

**Box 2: Questionnaire to antenatal mothers on labor analgesia**

a. **Age:**
18-25 / 26-30 /> 30 year
b. **Education:**
<10 std / 12std / graduate,
c. **Occupation:**
housewife / working
d. **area of residence:**
village / town / city
e. **Parity:**
first / second / multipara
f. **Awareness about labor pain:**
yes / no
g. **Do you know the severity of labour pain:**
tolerable / severe
h. **Do you think labour pain should be relieved:**
yes / no
i. **Are you aware of labour pain relief methods:**
yes / no
j. **If so what is the source:**
media / doctor / relatives and friends / other
k. **Are you aware of epidural labour pain relief method:**
yes / no
l. **Epidural analgesia is inserting a catheter at the back to give pain relieving drugs:**
yes / no
m. **Previous exposure to EA:**
yes / no
n. **Epidural catheter insertion is more painful than labor pain:**
yes / no
o. **EA increase the risk for operative delivery:**
yes / no
p. **Do you feel that epidural labour analgesia will affect your baby:**
yes / no
q. **Do you feel that epidural technique will lead to backache:**
yes / no
r. **Do you think that epidural analgesia will cost you more:**
yes / no
s. **will you recommend labour analgesia to your friends:**
yes / no
t. **what is your advice to your friend or relative about labor analgesia:**
recommend epidural / will not recommend epidural analgesia