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ORIGINAL RESEARCH

Perceptions and practice of epidural analgesia among women attending antenatal clinic in FETHA

Paul O Ezeonu[1]
Okechukwu Bonaventure Anozie[1]
Fidelis A Onu[1]
Chidi U Esike[1]
Johnbosco E Mamah[1]
Lucky O Lawani[1]
Robinson C Onoh[1]
Emmanuel Okechukwu Ndukwe[1]
Richard Lawrence Ewah[2]
Rita Onyinyechi Anozie[3]

[1]Department of Obstetrics and Gynaecology, [2]Department of Anaesthesia, [3]Department of Radiology, Federal Teaching Hospital Abakaliki, Abakaliki, Ebonyi State, Nigeria

Background: The pain of childbirth is arguably the most severe pain that most women will endure in their lifetime. Epidural analgesia is widely used as an effective method of pain relief in labor. It provides almost complete relief of pain if administered timely, and does not affect the progress of the first stage labor.

Objectives: The objective of this study was to determine the awareness and utilization of epidural analgesia in labor in pregnant women attending the antenatal clinic at Federal Teaching Hospital, Abakaliki (FETHA).

Methodology: This is a cross-sectional study involving 350 women attending the antenatal clinic between April 2016 and July 2016. A total of 335 questionnaires were correctly completed, and used for analysis.

Results: The average age and parity of the respondents were 27.6±8.2 years and 2.4±1.8, respectively. About 58.2% of respondents were civil servants, 98.5% were married, and 74.6% had a tertiary level of education. About 43.3% of the respondents are aware of the use of epidural analgesia in labor, but only 7.5% had used it; 95% of these were satisfied and desired to use it again. The reasons responsible for the poor uptake were desire to experience natural labor, cost, and fear of side effects. However, 70% of those who had not used it expressed the desire to use it.

Conclusion: Epidural analgesia is one of the most effective methods of pain relief in labor. However, the present study indicates that knowledge and practice of epidural analgesia among parturients are low. Efforts should be made to raise awareness, dispel misconceptions, and subsidize the cost of providing this invaluable care in modern day obstetrics.

Keywords: epidural, labor pain, practice, obstetric analgesia, perception

Introduction

The labor pain is probably the most severe pain that most women endure in their lifetime.[1,2] Since pain relief in labor has always been surrounded by myths and controversies, providing effective and safe analgesia in labor have remained a perennial challenge.[1] In some cultures, women are taught that labor pain is natural and the ability to accept and endure labor pain is a sign of womanhood.[3] The American College of Obstetricians and Gynecologists (ACOG) rightly observed that labor is associated with severe pain for many women and that under no circumstance should a woman be allowed to bear pain which is amenable to safe intervention while under the care of a physician.[4] It is therefore recommended that in the absence of any contraindication, pain relief should be provided in labor on maternal request.[4,5] The National Institute for Clinical Excellence also recommends the education of pregnant women on the options and availability of effective analgesia in labor as a

Correspondence: Okechukwu Bonaventure Anozie
Department of Obstetrics and Gynaecology, Federal Teaching Hospital Abakaliki, PMB 102, Abakaliki, Ebonyi State, Nigeria 480001
Tel +234 80 354 974 98
Email okeyanoziey2k@yahoo.com

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means of ensuring that they receive optimal pain management during childbirth.[6]

Epidural analgesia is widely recognized and used as an effective method of pain relief in labour.[3–6] It provides almost complete labor pain relief (in 90%–95% of cases) if administered early and has been shown not to impede the progress of the first stage of labour.[7] Epidural analgesia for labor and delivery involves the injection of a local anesthetic agent (lidocaine or bupivacaine) and/or an opioid (morphine or fentanyl) into the lumbar epidural space. The injected agent diffuses across the dura into the subarachnoid space where it acts primarily on the spinal nerve roots and to a lesser extent on the spinal cord and the paravertebral nerves to inhibit transmission of pain impulses.[8–10]

The use of epidural analgesia for relief of labor pain has increased globally in recent time.[11,12] There is a wide disparity in its use among countries, and intra-country variation also exits. The practice of epidural analgesia is higher in high-income countries where it is considered as the mainstay of labor analgesia in 50%–90% of obstetric units.[4,5,7,11,12] This is in sharp contrast to what is obtained in low-income countries with only between 1.3% and 12% of parturients benefitting from epidural analgesia.[12,13]

Neuraxial analgesia such as epidural analgesia is an effective method of pain control in labor. It provides effective relief of labor pain with little or no neonatal respiratory depressant effect.[4,9,10,13] Despite these benefits, patient's refusal, bleeding dyscrasia (coagulopathy), infection at the site for needle insertion, raised intracranial pressure, poor skills on the part of the anesthetist, severe maternal hemorrhage, and maternal septicemia are contraindications to its use.[9,14] It may be associated with some complications such as severe hypotension, prolonged second stage of labor, and increased risk of operative deliveries, urinary retention, postural puncture headache, epidural abscess, or meningitis.[4,5,10]

Despite the effectiveness of epidural analgesia in labor, it is not practiced in many obstetric units in Nigeria.[14] Lack of the requisite skills for the administration of epidural analgesia, ignorance on the part of the parturient, and the extra cost for providing epidural analgesia in labor may all have contributed to low utilization of this effective method of labor pain relief, especially in low-resource settings.[12,14]

There are currently no local studies that have assessed patients' knowledge and the practice of epidural analgesia in labor in Abakaliki, Southeast Nigeria; hence, we set out to investigate the level of knowledge of our parturients on the subject and their labor pain management preference.

Methodology

Study area

Ebonyi State is one of the five states in the South-East Geopolitical zone of Nigeria. It was created in 1996 from the largely rural areas of the preexisting Enugu and Abia states. It has three senatorial districts and 13 local government areas and an estimated population of 2.1 million people (2006 census). The Federal Teaching Hospital Abakaliki is located in the heart of the state capital. It receives referrals from peripheral hospitals within and outside the state. Patients who had their antenatal care with our facility were regarded as "booked" patients while patients who had their antenatal care elsewhere and/or were referred because of complications in pregnancy, labor, or puerperium without prior booking were regarded as "unbooked."

Study population

The participants were booked pregnant women attending the antenatal clinic of the Federal Teaching Hospital Abakaliki. Unbooked patients or patients in labor irrespective of their booking status were excluded from the study.

Study design and sampling method

This was a cross-sectional study involving 350 pregnant women who attended antenatal clinic between April 2016 and July 2016. Participants who gave informed consent to take part in the study were selected by simple random sampling technique. The sample size was 350. Sample size was calculated by using the formula $N = Z^2PQ/D^2$ (when population is >10,000); where P is the prevalence, Q is 1–P (proportion of persons who have not used the procedure), D is allowable error margin which is 5%, Z is a constant for standard normal deviation which is 1.96 at 95% CI. Taking P as 24.1%, which is the proportion of respondents who had awareness of epidural analgesia in a previous study,[15] this gave a sample size of 280. Applying an attrition rate of 20% (56) gave a sample size of 336 which was approximated to 350.

Instrument

The instrument for data collection was a self-administered pretested questionnaire that was subjected to a pilot survey involving 20 nonpregnant women randomly selected prior to the actual study.

Data analysis

The data were computed and analyzed with Epi info version 7 software (Center for Disease Control and Prevention, Chicago, IL, USA) and conclusions were drawn by means of descriptive statistics.

Ethical consideration

Ethical clearance was obtained from the research and ethics committee of Federal Teaching Hospital Abakaliki (FETHA). Each participant signed an informed consent form prior to participation in the study, while the parents or legal guardians of those under the age of 18 years provided informed consent on their behalf.

Results

A total of 350 questionnaires were distributed, but only 335 were properly filled and suitable for analysis, giving a response rate of 95.7%.

Table 1 shows the sociodemographic characteristics of the respondents. The mean age of the respondents was 27.6±8.2 years. About two thirds (64.60%; 230/335) of the respondents were within the age range of 25–34 years, while 19.4% (65/335) were >35 years of age. The average parity of the respondents was 2.4±1.8. Nulliparous women accounted for 10.40% of the respondents, while 47.80% accounted for a parity of 2–4. Majority of the respondents 58.20% (195/335) were civil servants, while 13.40 (45/335) were housewives.

Table 1 Sociodemographic characteristics, occupation, and parity (N=335)

Variables	Frequency	Percentage
Age (years)		
15–19	10	3.00
20–24	30	9.00
25–29	115	34.30
30–34	115	34.30
>35	65	19.40
Occupation		
Civil servant	195	58.20
Trader	35	10.40
Farmer	10	3.00
Housewife	45	13.40
Others	50	15.00
Highest level of education		
Primary	5	1.50
Secondary	80	23.90
Tertiary	250	74.60
Tribe		
Igbo	320	95.50
Yoruba	10	3.00
Hausa	0	0
Others	5	1.50
Marital status		
Single	5	1.50
Married	330	98.50
Parity		
None	35	10.40
1	105	31.30
2–4	160	47.80
>5	35	10.40

Table 2 Experience of labor pain (n=335)

Variable	Frequency (n)	Percentage (%)
Experience of labor pain		
Yes	300	89.60
No	35	10.40
Need for labor pain relief		
Yes	270	80.60
No	15	04.50
Indifferent	50	14.90
Total	335	100

A good number of the respondents 74.60% (250/335) had tertiary education, 23.90% (80/335) had secondary education, and only 1.50% (5/335) had only primary education. Majority of the study population 98.50% (330/335) were married, while 1.50% (5/335) was unmarried.

Regarding the respondents' knowledge of labor pains, Table 2 indicates that 89.60% (300) had previously experienced labor, while 10.40% (35) was nulliparous. Of the total number of respondents, 80.60% (270) would opt for pain relief in labor, while 14.90% (50) were indifferent, and the remainder objected to its use.

Regarding their knowledge of methods of pain relief in labor (Table 3), many of the respondents 65.70% (220) were aware of at least a pharmacological method of pain relief. The commonest method they had knowledge of was pentazocine injection, while a little over two fifths (43.30%) were knowledgeable about epidural analgesia. One hundred and fifteen of the respondents had no knowledge of any effective method of labor pain relief.

Table 4 shows the level of awareness of epidural analgesia. Less than half of the respondents (43.30%; 145/335) were aware of epidural analgesia for labor pain, while 52.20% were not aware of it, and the remainder (4.5%) was not sure of its role. Only 29% of those who had knowledge of epidural analgesia were aware that it was provided in FETHA. Regarding awareness on the mode of administration of epidural analgesia, only 35.90% of the respondents had correct knowledge, while 64.10% of them had no idea. The effectiveness of epidural analgesia for relief of labor pain was answered correctly by 23.90% of the respondents.

Table 3 Knowledge of methods of pain relief in labor (n=335)

Methods	Frequency (n)	Percentage (%)
Pethidine injection	25	7.50
Pentazocine injection	220	65.70
Tramadol injection	200	60.00
Epidural analgesia	145	43.30
Inhalational entonox	15	4.50
None	115	34.30

Table 4 Knowledge of epidural analgesia

Variables	Frequency	Percentage
Aware of epidural analgesia for labor pain		
Yes	145	43.30
No	175	52.20
I am not sure	15	4.50
Are you aware it is provided in FETHA?		
Yes	42	29.00
No	71	48.90
I am not sure	32	22.10
Epidural is the administration of a local anesthetic through a catheter into the epidural space of the spine		
Yes	52	35.90
Do not know	93	64.10
Epidural analgesia is one of the best forms of pain relief in labor		
Yes	35	23.90
Do not know	110	76.10
Epidural analgesia is administered by?		
A doctor	37	25.37
A nurse	15	10.45
Any health worker	19	13.43
I do not know	74	50.75

Table 5 shows the source of information of epidural analgesia in labor. Majority of the respondents got their information regarding the use of epidural analgesia for pain relief in labor from doctors (79.30%), nurses (55.20%), and Internet sources (41.40%). Antenatal classes held in the antenatal clinic (group sessions) was the source of information for 32.40% of the respondents.

Majority (72.41%) of the respondents who were aware of epidural analgesia had no knowledge of the complications associated with its use, but over a quarter (27.60%) had some knowledge of possible complications (Table 6).

Table 7 shows the intention to use epidural analgesia, indicating that only 7.50% (25/335) of the respondents had used epidural analgesia in labor. However, 50.70% of the respondents agreed that epidural analgesia should be made available in labor, while others were either indifferent (28.40%) or did not support its use (20.90%). Most respondents had not received adequate information on the use and benefits of epidural analgesia in labor (71.60%).

Table 8 indicates that all but one respondent were satisfied with the outcome of labor managed with epidural analgesia, with 92% likely to request for it again in future. One respondent was indifferent about repeat use. About 96% of the respondents said they would recommend it to other parturients.

Table 5 Source of information (n=145)

Source of information	Frequency	Percentage
Doctor	115	79.30
Nurse	80	55.20
Antenatal classes	47	32.40
Family and friends	35	24.14
Media/Internet	60	41.40

Table 6 Knowledge of complications of epidural analgesia in labor (n=145)

Complication	Frequency	Percentage
Back pain	25	17.20
Headache	35	24.14
Increased interventions in labor	45	31.03
Increase risk of cesarean section	15	10.34
Low blood pressure	15	10.34
Prolongation of second-stage labor	10	6.90
Effect on the unborn baby	40	27.59
None	105	72.41

Among those who had not used epidural analgesia in labor (Table 9), 70% (217) desired to use it when in labor, 16.13% would not want it, while 13.87% were not sure of their decision on its future use. The reasons for not wanting to use it were mainly due to the cost of the service (70%), desire to experience natural labor (64.52%), and fear of side effects (48.40%), and 32.30% had no reason.

Discussion

Pain management in labor has undergone various revolutions since 1847 when Simpson observed that chloroform could help relieve the pain women felt during labour.[16] Despite remarkable advancement in labor analgesia, acceptability and applicability of epidural analgesia in labor has not received enough coverage in our setting.[12–14,17–19]

Table 7 Attitude and practice of women toward epidural analgesia in labor (n=335)

Variables	Frequency	Percentage
Have you used epidural analgesia in labor?		
Yes	25	7.50
No	310	92.50
Epidural analgesia should be made available to all women in labor if they desire its use		
Yes	170	50.70
No	70	20.90
I am indifferent	95	28.40
Have you received adequate information on various forms of pain relief in labor including epidural analgesia?		
Yes	70	20.90
No	240	71.60
I am not interested	25	7.50
Would you like to know more about forms of pain relief in labor including epidural analgesia?		
Yes	295	88.00
No	30	09.00
I am indifferent	10	03.00

Table 8 Those who have used epidural analgesia in labor (N=25)

Variables	Frequency	Percentage
What was your experience from using epidural analgesia in labor?		
Satisfied	24	96.00
I was not satisfied	1	4.00
Would you like to use it again?		
Yes	23	92.00
No	1	4.00
I am not sure	1	4.00
Willingness to recommend epidural analgesia to another person		
Yes	24	96.00
No	1	4.00

The current study shows that 74.60% of the respondents had tertiary-level education. However, its relationship with the level of awareness and practice of epidural analgesia was not determined in this study, but there are conflicting findings from similar studies elsewhere. A study in Lagos found a significant association between the educational status of the respondents and their knowledge of obstetric analgesia[18] while similar studies in Ibadan and Maiduguri did not find any positive correlation.[17,19]

Our study showed that 80.60% of the respondents desired pain relief in labor despite almost four fifths (79%) of the respondents reporting no health education on labor analgesia by care providers. However, 88% expressed the desire for enlightenment regarding obstetric analgesia. It is therefore important for health workers to educate and offer women counseling on options of pain relief in labor, since the present study indicates that parturients did not have sufficient knowledge on the risks and benefits of labor analgesia to make an informed choice. The high demand for pain relief in labor by the respondents in this study was similar to the report by Iliyasu et al in Kano[20] and Audu et al in Maiduguri[19] but Kuti and Faponle in Southwest Nigeria reported that majority of the respondents were averse to pain relief in labor because labor pain was perceived as divine and should not be interfered with.[21]

Table 9 Those who have not used epidural analgesia in labor (n=310)

Variables	Frequency	Percentage
Would you like to use epidural analgesia in labor?		
Yes	217	70.00
No	50	16.13
I am not sure	43	13.87
Reason for rejecting epidural analgesia (n=93)		
Cultural reason	5	5.40
Fear of side effects	45	48.40
I want natural labor without pain relief	60	64.52
I have no reason	30	32.30
Expensive	70	75.30

Experience has shown that even among parturients who declined pain relief prior to the onset of labor, some may request it at the height of labor pain; this is usually the period of transiting from the first to the second stage of labor, this is a period of intense uterine contraction between 7 and 10 cm of cervical dilatation. At such times, women may do more with emotional support from health workers or relatives and not necessarily providing pharmacological pain relief.[6,19]

This study found that more than half of the respondents knew at least one pharmacological method of pain relief in labor with pentazocine injection being the most common (65.70%). In the present study, pentazocine was the commonest analgesia used for labor pain relief and may account for the level of awareness reported. The finding on utilization of epidural analgesia (43.30%) is higher than the 10% recorded in Ibadan[17] and 12% recorded in Benin[12] but similar to 47% and 42% reported in Hong Kong[22] and Riyadh,[23] respectively. However, it is less than the 76% in Karachi[7] and 62.5% reported in Chennai.[20] One common finding from the available literature is the fact that majority of the women who knew about epidural analgesia for the relief of labor pain were educated.[7,22–24]

Even though respondents in this study were aware of epidural analgesia in labor, this knowledge was more of surface value. For instance, only 29% of respondents were aware that it was being provided in FETHA, 35.90% were aware of the mode of its administration, 23.90% knew its effectiveness, and a significant proportion had no knowledge of its complications. This finding suggests that healthcare providers have to make more efforts in educating women on the options of pain relief in labor with the emphasis that labor pain was physiologic and transient and may not require an active intervention other than provision of support and adequate information on the physiology of labor. This study found that almost two thirds of the respondents (64.52%) desired natural labor. They should be encouraged to do so provided they are adequately informed of the available options.

The sources of information on epidural analgesia for pain relief in labor among respondents were from doctors (79.30%), nurses (55.20%), and Internet (41.40%). This is different from the findings in Karachi where doctors were the source of information among 40% of the respondents and the Internet accounted only 1%. Another study by Pattee et al in Ontario[25] showed that information about epidural analgesia was mainly from anesthetists and antenatal classes.

This emphasizes the importance of routine education on labor analgesia including the option of epidural analgesia.

Similarly, knowledge of complications of epidural analgesia was low as almost three-quarters (72.41%) of the respondents had no idea of possible complications. Majority of the responses on complications were subjective and wrong. Those who had the knowledge of the possible complications cited increased interventions in labor (21.3%), effect on the unborn baby (27.59%), and headache (17.20%) just to mention a few. These findings were similar to those reported by Pattee et al[25] and Barakzai et al.[24]

Although 7.5% (25) of the respondents had used epidural analgesia in labor, all but one expressed satisfaction and would desire it again in the current pregnancy. This enthusiasm was similar to that found in other similar studies.[26–28] Even among physicians with very high knowledge about the effectiveness of epidural analgesia, its practice leaves much to be desired.[2,28,29] Some women who reported not to have used epidural analgesia adduce high cost as a reason, indeed provision of epidural analgesia costs about four times more than the more commonly used pentazocine in the maternity unit of the study center. Therefore, subsidizing cost or the provision of free epidural services under the National Health Insurance scheme may improve uptake.

Interestingly, this study found that 70% of the respondents would like to utilize epidural analgesia in the current pregnancy if provided with adequate information. The fact that the respondents reported lack of sufficient information to make an informed choice on labor analgesia is an important finding from this study. Therefore, healthcare providers need to provide sufficient information on the options of pain relief in labor including the benefit of companionship in minimizing analgesic interventions during labor.

In conclusion, this study has revealed a large lacuna in the knowledge of pain relief in labor and of epidural analgesia in labor among pregnant women in Abakaliki. Since women desire to know more about this subject, efforts should be made to raise awareness by providing health education, dispelling misconceptions, and subsidizing the cost of providing this service in labor.

Disclosure

The authors report no conflicts of interest in this work.

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