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Ambulatory epidural analgesia during uncomplicated obstetric labour: Feasibility study at the Centre hospitalier intercommunal Villeneuve Saint Georges

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ABSTRACT

Objective: *The study was carried out to assess the feasibility of walking under obstetric epidural analgesia at the Villeneuve St Georges Inter-communal Hospital (VSGIH).*

Methods: *The study population consisted of parturient who consulted a labour and delivery unit during the study period, and the nursing staff of this ward.*

Results: *During the study period, only 33 women (37%) out of a possible 87 agreed to walk around, 40 did not do so because they were tired and 16 refused to take part in the study. Of the 33 patients recruited, 5 did not walk because of fatigue at the time the procedure was carried out. The mean age was 30.33 years, all classified as ASA II. More than 78% were undergoing first or second gestures, and almost 50% had their epidural inserted at 3cm cervical dilatation. Ambulation took place during the day in 90% of patients, with 50% of them completing a single slot for an average duration of 69.5 minutes in the 1st slot. The main reason for stopping walking was fatigue in 36% of patients. 96% of patients were not aware of the possibility of ambulation under epidural during labour, and all women were satisfied after ambulation. More than a third of the nursing staff who took part in the study (66.7%) thought that the walking under obstetric epidural analgesia (WUOEA) was safe, and 15 of them (71.4%) thought that it was easy to use. The obstacles to implementing the WUOEA were: the absence of wireless monitoring (42.9%), very restrictive selection criteria (23.8%), lack of patient motivation (19%), and fear of the safety of the technique.*

***Conclusion**: The effective and permanent introduction of ambulatory epidural analgesia is possible at the Villeneuve Saint Georges Intercommunal Hospital. New equipment, in particular the wireless monitor, is required for this purpose.*

Key words: epidural analgesia ambulatory Villeuve St Georges hospital centre

Introduction

Obstetric epidural analgesia (OED) is the reference technique for managing the pain of childbirth, because of its advantages in terms of safety, efficacy and harmlessness (1). However, it can worsen the experience of labour when the patient has to remain on the delivery table for several hours, without being able to get up. This recumbent position is usually imposed because of the risk of motor block and falls induced by local anaesthetics. In this respect, the HAS (1) recommends using low doses of local anaesthetics to respect the experience of childbirth by limiting sensitive-motor block. Childbirth is becoming increasingly medicalised. On the other hand, users are calling for a less medical approach to childbirth that is more respectful of the physiology of birth, particularly in low-risk obstetric situations. Ambulatory epidural analgesia (AEA) was developed in the 1990s, thanks to the reduction in analgesic doses and the availability of new local anaesthetics that were less likely to cause motor block. It involves 1) placing an epidural catheter during obstetric labour 2) using low-concentration anaesthetic products for induction 3) the actual ambulation under epidural. The aim is to make medical childbirth as physiological as possible and to improve parturient satisfaction (2). One of the potential obstetrical benefits of AEA would be to reduce the duration of labour. From a physiological point of view, foetal descent is favoured by the upright position. The reduction in the duration of labour with AEA is controversial and difficult to demonstrate in clinical studies. Indeed, the duration of ambulation is often short, as parturient prefer to rest. In addition, it is methodologically complex to take into account all the confounding factors (parity, term, etc.) and to time the onset of labour (2). For obstetric epidural analgesia without ambulation, the HAS recommends "avoiding prolonged dorsal decubitus maternal positioning in order to prevent cavus syndrome and arterial hypotension (grade C). (1)

However, there is no specific reference framework for the AEA, particularly in France. Very few studies have been devoted to it. Nevertheless, a Cochrane review published in 2013 (3) showed that ambulation only reduced the duration of the first stage of labour by around 1 hour in both nulliparous and multiparous women. There was no influence on the second stage of labour, mode of delivery or foetal vitality.

Another review of the literature in 2018 (4), based on five randomised controlled trials and one case-control study, concluded that motor block was less present with patient controlled epidural anaesthesia (PCEA) and its more recent variant programmed intermittent epidural bolus (PIEB) than with continuous infusion. However, there was no difference in the incidence of instrumental delivery or caesarean section in the case of PCEA.

Figures from the French national perinatal survey

published in 2022 revealed that 83% of women who gave birth by vaginal delivery had benefited from epidural analgesia (5). However, this survey did not reveal the particularity of ambulation under epidural analgesia, when we consider that during the same survey, 60% of women expressed the need for mobilisation/change of position during labour, either verbally or through a birth plan (in 10% of cases). AEA remains marginal in France. The French multi-centre EPIDOL survey (6) of an exclusive representative sample of patients receiving epidural analgesia found that only 0.5% of patients walked during labour. A study based on the analysis of 8284 responses to the CIANE declarative survey, shows a stagnation in the rate of epidurals allowing ambulation at 6% (6).

In view of the low uptake of the technique, certain hospital maternity teams have undertaken to look for an explanation. The reasons given are mainly a lack of information on the parturient's part, but also a probable fear on the part of the carers as to the possible increase in workload in terms of monitoring. At Villeneuve St Georges Hospital centre, it has been observed that although a protocol has been in place since 2019, AEA remains marginal, with around five parturients per month undergoing epidurals out of a volume of 3,500 deliveries per year. This is all the more surprising given that there is a real demand from the birth room team, particularly the midwives. We therefore wondered about the limits to adherence to this practice in our centre. We therefore thought it would be useful to carry out this study to see whether ambulatory epidural analgesia could be effectively and permanently implemented in the maternity unit of the Villeneuve Saint Georges inter-communal hospital.

Methods

Type, setting and period of study

This is a descriptive study, single-centre study carried out at the maternity of Villeneuve Saint-Georges Inter-communal Hospital Centre over a 3-month period from 10 June 2022 to 09 September 2022.

Study population, sampling and selection of the patients

The study population consisted of parturient who consulted a labour and delivery unit during the study period. Sampling was exhaustive and patients were recruited consecutively.

Voluntary parturient fulfilling the conditions of the following AEA care protocol were included in the study:

Voluntary patient - Spontaneous labour - Monofoetal pregnancy - Latent phase or onset of labour - Normal progress - Membranes intact or ruptured with clear amniotic fluid - Term > or = 37 weeks of amenorrhoea - Eutrophic foetus - No morphine prior to epidural insertion - Cephalic presentation - Accompanying person present - Normal foetal heart rate

The parturient with the following criteria were excluded from the study:

Major psychiatric history - Communication diffi-

culties - Scarred uterus - BMI > 40 kg/m2 - Substance abuse - Chronic maternal pathologies (pre-existing diabetes, severe asthma, heart disease, epilepsy, hypertension, etc.).

Care protocol

Our establishment, the Villeneuve Saint Georges intercommunal hospital centre (CHIV), has a level IIB maternity unit which handles 3,400 deliveries a year. OEA is used for around 80% of deliveries. The anaesthesia team applies a unique dilution protocol with low doses of anaesthetic mixture: ropivacaine 1 mg/mL with sufentanil 0.25 ug/mL. The patient must be perfused and a monitorised before the insertion of epidural catheter analgesia.

Induction doses vary according to the anaesthetist's usual practice, but maintenance is systematically carried out by PCEA in programmed intermittent epidural bolus (PIEB) mode (8 mL automatic bolus per hour, no continuous flow, self-administered boluses of 8 mL every 12 minutes, maximum 3 times per hour).

For maternal monitoring, blood pressure is taken every 5 minutes with a cuff, for at least 30 minutes. In the absence of hypotension, this monitoring is spaced out every 30 minutes except in the case of a bolus not provided for in the epidural. Foetal monitoring is carried out by continuous monitoring of the foetal heart rate (FHR). This monitoring complies with that recommended by the HAS. (1)

An AEA care protocol was validated in 2019 by the anaesthesia and obstetrics team (doctors and midwives). This protocol was deliberately limited to parturient with no particular risk factors, in order to develop the habit and expertise of ambulation.

Practice of AEA

After induction of AEA, a period of supine monitoring for 1 hour (blood pressure every 5 minutes, continuous monitoring of foetal heart rate), the patient will be asked to walk around.

She will be told that we are carrying out an anonymous study, which in no way changes our practices, for which we will be asked to record certain parameters, and that if she agrees, she can fill in a satisfaction questionnaire the day after her delivery.

The first criterion for the AEA is good analgesia for the patient. Sensory block is assessed by a cold skin test, which is easy to perform. However, it is not systematic if the patient says she is relieved. If analgesia is good, an orthostatic hypotension test (see protocol) is carried out to authorise the walking epidural anlgesia. A simple motor test (ability to stand without support, to walk a few steps) is carried out. If there is any doubt, a Romberg test or a unipodal support test may be carried out.

If the tests are conclusive, the perfusion is plugged (so remains available in case of emergency), the blood pressure cuff is removed (intermittent blood pressure measurement, every hour), and the patient is allowed to move within the perimeter of the FHR monitoring (2.5 metres) with the PCEA pump

in place. The ball, the chair and the delivery table are set up in this area. The patient is informed that if the person accompanying her leaves, she must go back to bed and inform the team.

The Criteria for stopping ambulation are: - Appearance of a foetal heart rate anomaly - Obstetric intervention - Complete dilation - Patient's wish - Unavailability of companion - Reinjection for insufficient analgesia - Appearance of motor block, secondary hypotension, malaise or fall

Data collection

Data were collected using Diane (Bow Medical®), the anaesthesia software, which was started when the catheter of epidural analgesia was inserted. The primary endpoint (premature return to bed), its cause and total ambulation time were recorded as comments on the anaesthesia sheet. The time taken to set up ambulation was recorded on a dedicated sheet and sent to the study investigator. The satisfaction questionnaires were anonymous. The questionnaires given to the care teams concerned anaesthetists, gynaeco-obstetricians, midwives, nurses and care assistants. All questionnaires were stored on a secure database.

Study variables were:

- Demographic characteristics: age, pre-pregnancy body mass index, ASA class
- Obstetrical characteristics : parity, term of pregnancy, history of epidural insertion, history of ambulation under epidural, development of a birth plan, cervical dilatation at the time of ambulation

Anaesthetic and ambulation characteristics

- "Difficult" epidural placement (at least 3 punctures or use of a more experienced hand)
- Time of first offer to walk around (day 8am - 8pm, evening 8pm - 0am, night 0am - 8am)
- Refusal to walk
- Activity during ambulation: walking, balloon, chair
- Failure to ambulate despite patient's wishes
- Total duration of ambulation
- Number of periods of ambulation (periods of ambulation interspersed with return to bed)
- Reason for interruption of ambulation (patient or medical team)
- Premature return to bed and cause (primary outcome)

Assessment of parturient satisfaction with the following items:

Knowledge of ambulation under epidural analgesia

- Appreciation of ambulation under epidural
- Motivation of ambulation
- Degree of satisfaction after ambulation
- Parameters to be modified in the protocol as presented

Assessing staff opinion of the procedure

- Identification
- Opinion on the time taken to implement and manage the procedure
- Opinion on the likely obstacles to ambulation
- Agreement to continue the protocol as presented

Assessment criteria

Primary endpoint

Acceptability of walking under epidural analgesia

Secondary endpoints

Premature return to bed

Parturient satisfaction

Failure to ambulate

Agreement of carers to continue the protocol

Statistical analysis

Data were coded and exported to SPSS 21.0 for analysis.

Quantitative variables were expressed as means and categorical variables as frequencies. Data were presented in tables and figures.

Ethical and regulatory aspects

For this work, we successively obtained authorisations from:

1. Scientific Committee of the Department of Anaesthesia and Intensive Care of the University Clinics of Kinshasa
2. Ethics Committee of the Clinical Research Centre of the Iles de France Region
3. Head of the Intensive Care Anaesthesia Department at Villeneuve St Georges Hospital.

There are no conflicts of interest in this work.

RESULTS

Patient flow chart

During the period from 10 June to 9 September 2022, 875 deliveries were carried out, including 278 cases of induction, 50 cases of scheduled caesarean sections, 173 cases of emergency caesarean sections and 497 cases of spontaneous labour.

Of the 875 deliveries, 671 were carried out under epidural analgesia for all types of delivery.

Of the 497 parturient in spontaneous labour, 471 gave birth under epidural analgesia.

Of these 471 patients who gave birth under epidural analgesia, 89 had been offered the option of ambulation and only 33 (37%) agreed to ambulate. Of the 56 patients who did not agree to ambulate, 40 because of fatigue and 16 because they refused to take part in the study.

Of the 33 patients recruited to the study, 5 did not actually ambulate because of fatigue at the time the procedure was set up.

General characteristics

Table 1 presents the general characteristics of the patients.

The mean age of the patients was 33.33 years, all were classified as ASA II, and 4 (12%) had comorbidities (obesity: two cases, diabetes: one case and arterial hypertension: one case). None had a history of ambulation.

Table 1. General characteristics of the patients

Obstetrical characteristics

Table 2 presents the obstetrical characteristics of the patients

Variables	Frequency (n=33)	%	Mean (SD)
Age (year)			**30.33 (4.21)**
18-35	31	93.93	
35 or plus	2	6.06	
Comorbidities			
Absente	29	87.9	
Obesity	2	6.1	
High blood pressure	1	3	
Asthma	1	3	
ASA class			
II	33	100	
Previous epidural			
No	23	69.7	
Yes	10	30.3	
Previous walking under epidural	0	0	

94% of the patients had not drawn up a birth plan, and 64% of the pregnancies had a term of more than 40 weeks. Over 78% of the women were in their first or second parity.

The epidural was applied in almost 50% of cases at 3cm cervical dilatation.

Table 2. Obstetrical characteristics of patients

Characteristics related to the epidural and ambulation

Table 3 shows the characteristics relating to ambulation

Variables	Frequency (n=33)	%
Birth project		
Yes	2	6.1
No	31	93.9
Parity		
Primiparous	13	39.4
Second pare	13	39.4
Third pare	1	3
Fourth pare	6	18.2
Pregnancy age		
≥37 - <40 week	12	36.4
40 – 42 week	21	63.6
Dilatation (cm) when placing epidural catheter		
1	1	3
2	7	21.2
3	16	48.5
4	9	27.3

Ambulation took place in 90% of cases during the day, with a single slot for 50% of patients.

The average time taken to set up ambulation in the 1st slot was 5.24 minutes (SD: 1.65) for a total average ambulation time of 69.5 minutes.

Table 3. Walking-related characteristics

Activities performed

Table 45 shows the activities performed during theambulation

Variables	Frequency (n=33)	%
Difficulty on inserting the epidural catheter		
Yes	0	0
No	33	100
Walking during OEA		
Yes	28	84.8
Non	5	15.2
Time for a walk	**N= 28**	

Day	25	89.3
Night (night and evening)	3	10.7
Motor blok before walking	**N = 28**	
Absent	28	100
Slot number of walking		
1	14	51.9
2	7	25.9
3	5	18.5
4	1	3.7
Time to set up (minutes)	**Mean (SD)**	**Extreme**
First slot	5.24 (1.65)	3 à 9
Time of walking	**Mean (SD)**	**Extreme**
First walking (minutes)	69.46 (46.343)	0 à 210
Second walking (minutes)	25.5 (32.4)	0 à 105
Third walking (minutes)	15 (42.032)	0 à 210
Fourth walkong (minutes)	1.61 (8.504)	0 à 45

The main activity was playing with a ball and walking.

Table 4. The activities performed during the ambulation

Reason for stopping wandering

Table 5 shows the reasons for stopping ambulation.

Activities	Frequency (n=28)	%
Ballon		
No	6	21.4
Yes	22	78.6
Walk		
No	10	35.7
Yes	18	64.3
To set down		
No	19	67.9
Yes	9	32.1
Hyper flexion		
No	27	96.4
Yes	1	3.6

Eleven of the 28 patients who had ambulated stopped ambulating at the first time slot and the main reason for stopping ambulation was fatigue in 36%.

Table 5. Reason for stopping ambulation

Legend: LA = local anaesthetic, AFHR = altered foetal heart rate.

Women's satisfaction

Stopping ambulation	Frequency (N = 28)	%
Yes	11	39
No	17	61
Reason for stopping ambulation	N = 28	
Fatigue	10	36
Need of LA injection	1	3.5
AFRH	3	11
Cesarean	1	3.5
Failure of the ambulation	0	0

Table 6 shows women's satisfaction

In 96% of cases, the patients were not aware of the possibility of ambulation under epidural during labour,

They were satisfied with the procedure in 100% of cases and in 68% of cases they had nothing to say about the procedure.

Table 6. Women's satisfaction

Legend: AEA = ambulatory epidural analgesia.

Variables	Frequency	%
Knwoledge of AEA	**N=28**	**%**
No	27	96.4
Yes	1	3.6
Satisfaction after ambulation		
Satisfied	28	100
Not satisfied	0	0
Suggestion protocol modification		
Nothing	19	67.9
Facilicitating walking	7	25
Better pain relief	2	7.1

Opinion of nursing staff on the implementation of the AEA protocol

Table 7 shows staff opinions on the implementation of the AEA protocol.

A total of 21 care staff took part in implementing the protocol, distributed as follows:

13 midwives (61.9% of all), 4 junior anaesthetists (19% of all), one obstetrician-gynaecologist (4.8% of all), two nurses (9.5% of all) and one care assistant (4.8% of all). More than a third of staff (66.7%) thought the AEA was safe, only 23.8% thought it was dangerous and 9.5% did not know. All staff felt that it was useful to implement the AEA and 15 (71.4%) felt that it was easy to do so, 2 (9.5%) felt it was difficult and 4 (19%) did not know. The time required to implement the AEA was judged to be short by 12 people (57.1%), long by 4 (19%) and 5 (23.8%) had no opinion. The obstacles to the introduction of the AEA were: the absence of wireless monitoring for 9 person (42.9%), very restrictive selection criteria for 5 person (23.8%), lack of patient motivation for 4 person (19%), fear of the safety of the technique for 2 person (9.5%), epidural analgesia that was too deep for one person (4.8%), lack of motivation on the part of the anaesthetic team for one person (4.8%), and the lack of anaesthesia for one person (4.8%).

Table 7. Opinion of care staff on the implementation of the AEA protocol

Discussion

Professional category	**N = 21**	**%**
Junior anaesthetist	4	19
Senior obstetrician	1	4.8
Midewive	13	61.9
Nurse	2	9.5
Nursing auxiliary	1	4.8
Opinion on the safety of implementation	**N = 21**	
Safe	14	66.7
Potentially dangerous	5	23.8
No opinion	2	9.5
Opinion on the benefits of introducing	**N = 21**	
Helpful	21	100
Opinion on difficulty on setting up	**N = 21**	
Easy to set up	15	71.4
Difficult to implement	2	9.5
No opinion	4	19
Opinion on the time needed to set up	**N = 21**	
Short	12	57.1
Long	4	19
No opinion	5	23.8
Obstacles to implementation	**N=21**	
No wireless heart fœtal rate monitoring	9	42.9
Overly restrictive selection criteria	5	23.8
Lack of patient motivation	4	19.0
Fear of technical safety	2	9.5
Excessively deep epidural analgesia	1	4.8
Lack of motivation in the anaesthetic team	1	4.8
Lack of motivation on the part of the gynaecolgy and obstetric team	1	4.8

This study was carried out to evaluate the introduction of ambulatory epidural analgesia in the maternity unit of the Villeneuve Saint Georges Intercommunal Hospital. It showed that 37% of eligible women accepted the AEA. These women all had full-term pregnancies and had one or two pregnancies, were aged between 18 and 35 years and had no comorbidities. Refusal to ambulate and cessation of ambulation were mainly due to fatigue. Most of the women had no knowledge of the AEA and all were satisfied with it. The majority of staff interviewed felt that the AEA was useful, safe and easy to implement. The main obstacle to its implementation is the lack of wireless monitoring.

Our study showed that the average age of parturient was 30 years (+/-4 SD). These results are in line with the French perinatal survey of 2021 which also found that the average age of parturient was 30.9 (5). Bullingham found an average age of 28 years in his comparative study of two groups of patients on the maintenance of epidural analgesia between the PIEB mode and continuous infusion (4).

The vast majority of the women interviewed had no knowledge of AEA. These results are similar to those of the study by Simoneau (7), who found that only 8% of maternity hospitals in France practise ambulatory epidural analgesia.

In our series of 33 patients who took part in the study, only 2 (6%) had drawn up a birth plan. The 2021 French perinatal survey found a low rate of elaboration of a birth plan of around 10% (5). This finding could be explained by the fact that parturient expressed their wishes regarding the birth process verbally during consultations with midwives and when they were welcomed in the delivery room when they came to give birth.

Of the 28 patients who actually walked: 89%, i.e. 25 patients walked during the day. Our results differ from those reported by Cyndel D'Incau (8)did not find a great difference between the percent of those who walked during the day or at night with respectively 50% of patients having done so at night compared to 44% during the day in a sample of 59 patients. This contradictory finding can easily be explained by the fact that the work phase occurs at the time of ambulation. However, it must be recognised that the moment of ambulation is dependent on the moment of onset of labour and therefore on the placement of the epidural analgesia catheter. There is no evidence that labour often begins either during the day, as in our case, or at night. We did not record any motor block in this series. This result is similar to those of several authors including Shella E.Cohen (9) in 2000 in the USA who found in her randomised study the absence of motor block in group 3 whose protocol had excluded the test dose of lidocaine and an anaesthetic mixture made up of very low doses of bupivacaine at 0.0625%+Sufentanil 0.33ug/ml (13-15ml/h) in maintenance. Abrahams M et al(10) in 1999 in Ireland also found an absence of motor block in a series of patients who had undergone epidural anaesthesia without a test dose of lidocaine, but a local anaesthetic mixture of bupivacaine 0.1% + fentanyl 100ug . And Giorgio Capogna (11) who found less motor block in the epidural maintenance group in PIEB mode 2.7% vs 37% in the PCEA group with continuous flow. The same observation was made in the study by Bullingham(4) who found that the prevalence of motor block in the PIEB + PCEA group was 1.0%, which was significantly less than 21.8% in the continuous perfusion group ($p < 0.001$).

The literature review reported that low doses of local anaesthetics significantly reduced the risk of motor block, and that the PIEB mode made it possible to reduce the total and hourly doses of local anaesthetics used, with great satisfaction on the parturient's part (11). This is the attitude adopted in the department and would explain the absence of motor block in 100% of cases.

Our series showed that 52% of patients had only one ambulation slot. Shella E. Cohen (9) found in her series that 68% of patients who were able to ambulate chose to do so, and most often only once, to go to the bathroom or toilet. We think that the reason for this could be the fatigue that sets in once the pain has been relieved and a subsequent lack of motivation, as the tendency observed was to simply want to rest once the pain had been relieved.

In our series, we found an average walking time of 69 minutes (+/-46 SD). Our results are similar to those of Frenea (12) who found an ambulation time of 64 +/-34min (30% of the 1st stage of labour).

Our study found that in almost 40% of cases, fatigue was the main reason for premature return to bed. Cyndel D'Incau (8) found similar results to ours in a series of 55 patients followed, i.e. 40.7% of cases where ambulation was stopped due to fatigue, with almost 40% of non-ambulation due to rapid delivery in the group of those who did not ambulate.

We found that 100% of the women were satisfied with their ambulation. Numerous studies, including that by C. Fisher (2), Cyndel. D'Incau (8), show that patient satisfaction is almost total after ambulation and the use of PIEB mode for analgesia maintenance. The reason for this was simply that they retained a certain degree of autonomy and were able to manage the level of analgesia as desired.

We noted in our study that 96% of patients had no information about the possibility of ambulation under epidural anaesthesia, unlike Cyndel D'Incau (8) who found in her series that 67% of patients had received information on ambulatory epidural analgesia from health staff and 12% from family and friends. We think that this could be explained by the fact that ambulatory epidural analgesia is not sufficiently popularised.

The search for autonomy was the main reason for ambulation in 24% of women in our series. Cyndel D'Incau (8) found similar results to ours, in fact their study showed that the main motivation for ambulation among patients was the fact that they thought it would speed up labour in 74% of cases and that the quest for autonomy was found in only 19% of cases.

Our study showed that the nursing staff had a favourable impression of the safety of the procedure: 67% considered that walking under AEA was safe for women, and 71% thought that setting up the procedure was not time-consuming. However, not all professional categories responded to the questionnaires in the same proportions. In fact, only midwives were the most numerous, while obstetrician-gynaecologists were less numerous.

Strengths and limitations of the study

This study showed that the AEA can be implemented at the CHIV, and that women and nursing staff can easily adhere to it.

This study certainly includes a selection bias due to the type of sampling and its monocentric nature. During patient recruitment, the contribution of the birth room team was considerable, but it was also subject to certain parameters such as the volume of work in the birth room during certain periods, and the level of appropriation of the subject after the protocol had been put in place at the start of the study.

The small sample size of this study, as well as the low significance of the results, can be seen as limiting the representativeness of larger-scale analyses.

The questionnaire presented to the patients and staff who took part was also a limitation in terms of its design in order to be able to circumscribe the whole question.

Conclusion

Our study has enabled us to highlight the fact that: The main reason for the low rate of ambulation in our maternity unit was the lack of information about the procedure, and that fatigue was often the reason for returning to bed prematurely, apart from when full dilation had been achieved. Patient satisfaction after ambulation during labour was evident. In this respect, every woman who comes for delivery should be offered the possibility of ambulation under ambulatory epidural analgesia.

The analgesia protocol as used considerably reduces, if not eliminates, the risk of motor block, and perinatal consultations should emphasise the possibility of mobilisation under epidural during labour, the associated benefits and the associated safety.

Emphasis should therefore be placed on informing patients about the possibility of walking around under an epidural during antenatal consultations, and the advantages of doing so. With a view to facilitating this ambulation, it is also necessary to have the necessary equipment to enable patients to walk around safely.

Authors' contributions

Suzanne Ngomba: conception of the study, drafting of the manuscript and data collection.
Nicolas Boquillon: conception of the study.
Wilfrid Mbombo: conception of the study and drafting of the manuscript.
All other authors: reading and correction of the manuscript.

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References

1. Accouchement normal : accompagnement de la physiologie et interventions médicales. Recommandation de bonne pratique clinique. HAS. Mise en ligne le 25 janv 2018- Mis à jour le 27 nov.2023.
2. Laurie Girard. Effet de la déambulation sous anesthésie péridurale déambulatoire sur la durée de la phase active et le déroulement du travail obstétrical : étude prospective unicentrique. Gynécologie et obstétrique. 2020. Ffdumas-03047956f.

3. Lawrence A, Lewis L, Hofmeyr G-J, Styles C. Maternal positions and mobility during first stage labour: Cochrane data base Syst Rev October 2013; 9(10):CD003934. DOI:10.10002/14651858.CD003934.pub4.

4. Bullingham A, Liang S, Edmonds E, Mathur S, Sharma S. Continuous epidural infusionvs programmed intermittent epidural bolus for labour analgesia: a prospective, controlled, before-and-after cohort study of labour outcomes. Br J Anaesth. 2018 Aug ; 121(2) : 432-37. DOI : 10.1016/j.bja.2018.03.038.

5. Enquête nationale périnatale, Rapport 2021 : Les naissances, le suivi à deux mois et les établissements ; situation et évolution depuis 2016. République française/Santé Publique France/INSERM.

6. Ducloy Bouthors A-S. Déambulation, ballon et postures pendant le travail obstétrical : où en est-on ? 2022. https:/www.sciencedirect.com/science/article/pii/S1279796022000869.

7. Simoneau E, Elmaleh Y, Imauven O. Péridurale déambulatoire pour le travail obstétrical/ pourquoi et comment. Le Praticien en Anesthésie. 2023 ; volume 27, Issue 3, p155-59.

8. Cyndel D'Incau. La déambulation pendant le travail : état des lieux de la pratique à la maternité des hôpitaux du Léman. Gynécolgie et obstétrique.2016.ff dumas-01349664f.

9. Cohen SE, Yeh JY, Riley ET, Vogel TM. Walking with labor epidural analgesia: the impact of bupivacaine concentration and a lidocaine-epinephrine test dose. Anesthesiology 2000; 92(2):387-2. DOI: 10.1097/00132586-200012000-000018.

10. Abrahams M, Higgins P, Whyte P, Breen P, Muttu S, Gardiner J. PIntact proprioception and control of labour pain during epidural analgesia. Acta Anaesthesiol scand 1999; 43(1):46-50. DOI:10.1034/j.1399-6576.1999.430111.x.

11. Capogna, G, Camorcia M, Stirparo S, Farcomeni A. Programmed Intermittent Epidural Bolus Versus Continuous Epidural Infusion for Labor Analgesia:The Effects on Maternal Motor Function and Labor Outcome. A Randomized Double-Blind Study in Nulliparous Women. Anesth Analgesia 2011; 113 (4):826-31.

12. Frenea S, Chirossel C, Rodriguez R, Baguet J-P, Racinet C, Payen J-F. The effects of prolonged ambulation on labor with epidural analgesia. Anesth Analg; 2004; 98 (1) 224-29. DOI: 10.1213/01.ANE.0000090317.01876.D9.