

Practice of Epidural Analgesia in Obstetrics Observational Monocentric Descriptive Study

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I. INTRODUCTION

Childbirth is one of the most significant events in a woman's life, and the pain that accompanies it is lived as a perceptual, multidimensional and unanimously recognized experience. The parturients of yesteryear have fully integrated the inevitable and redemptive nature of obstetrical labor pains.

Pain is a complex, subjective and multidimensional phenomenon that will lead to a patient's response that includes verbal expressions about pain. These are behavioural responses and physiological indicators of stress, the pain experience. For a long time, pain was lived as a fatality. It was only dealt with sparingly by medicine. The twentieth century was marked by a demand to no longer suffer, men are no longer inclined to suffer this fatality that has weighed on them for many centuries. From an ethics of acceptance of pain, an inevitable test for the human condition, we have moved to an ethics of refusal to suffer and the therapeutic imperative, due to scientific advances and the growing hold of techniques.

In addition, the decrease in maternal mortality during childbirth has allowed doctors to focus more on the management of obstetric pain. Obstetric pain is defined as that felt from the beginning of labor to the immediate postpartum and affects the progress of labor and fetal well-being. Its understanding and management remains a major objective, for anesthesiologists, obstetricians and midwives in the birth room.

Obstetric analgesia is a medical, human and ethical duty to parturients. It has improved maternal and fetal safety and helped reduce anaesthetic morbi-mortality in obstetrics. Epidural analgesia remains a technique of choice and occupies an important place in the management of parturients admitted in the work room at the maternity level. It is proposed and practiced in all the parturients for whom the low way is accepted and who no longer suffer when they give birth to their child allowing them to live more serenely the birth. The installation of an epidural catheter allows the management and maintenance of analgesia until delivery. Among the strategies of the practice of analgesia is the use of low concentrations of local anesthetics.

We carried out a mono centric observational descriptive study at the level of the Specialized Hospital Establishment (EHS) of gynecologic-obstetrics.

We proposed a protocol of epidural analgesia for delivery and then evaluated the acceptability, appreciate the experience of delivery by our partners, in order to promote the analgesic

epidural as a technique, accessible to our partners within the specialized hospital and generalized to other hospitals.

The main objective was to evaluate the implementation of an epidural analgesia protocol for delivery at the specialized hospital of gynecology and obstetrics, with a secondary objective which is to appreciate the experience of delivery under epidural analgesia by the parturients.

The aims of the study are to promote the introduction of the analgesic epidural as a technique, accessible to our partners within the specialized hospital and to generalize it to other hospital centers and also to promote the pedagogical bases of practice, delivery and monitoring for practitioners and residents in the specialty.

II. PATIENTS AND METHODOLOGY

A mono-centric observational descriptive study is carried out at the Specialized Hospital Establishment (EHS) of gynecologic-obstetrics of Oran, covering a period of two and a half years, from May 2014 to November 2016

- Inclusion Criteria: All the parturients whatever their gestures and parity, followed or not for their pregnancy at the level of the service of gynaecology and obstetrics, admitted for delivery by birth every day 24 hours.

- Exclusion criteria: Will not be part of the study, parturients admitted in time with a history of progressive neurological pathology, progressive hemostasis disorders and or not corrected before work, anticoagulant treatment in progress if the therapeutic window is impossible or unscheduled, lumbar puncture site infections due to risk of percutaneous contamination, documented systemic infection with fever 38,5 C° and maternal hemodynamic instability.

Criteria for non inclusion: The refusal of the parturients, after they have received clear information, and which must not be transgressed.

- Participation criteria and consent:
- Acceptability at physician's suggestion
- On request of the partner

Judgment Criteria: The Maternal satisfaction is judged on simultaneous presence of a significant decrease of an analog visual scale, a value of 30 mm, the absence of maternal resonance of an epidural analgesia (motor block, hemodynamic resonance) Use of instrumental maneuvers (forceps), the success of the technique and the absence of neonatal resonance (RCF modifications, Apgar score at one minute and five minutes of life).

The study was conducted in 120 full-term parturients with a cerebral presentation, who benefited from epidural analgesia.

In collaboration with the gynaecologist obstetrician and the midwife, the proposal to carry out the delivery under epidural analgesia is formulated to the parturiers who ignore the possibility of benefiting from it. After the clearest possible explanations (informed consent) and once the agreement is obtained, the preanesthetic consultation is carried out in the pre-work room or in the work room. Long-term or near-term partners, who requested the technique, benefited from a consultation in the third quarter and validation of their request.

The puncture was performed by median for all parturients, in a half-seated position on the table. After a local anaesthesia of the skin puncture point with 2% non-adrenaline lidocaine, the identification of the epidural space in L4 L5 or L3 L4 was carried out by the resistance loss technique using the liquid mandrel. A routine test dose of 3 ml of 2% lidocaine for arachnoid injection. Bupivacaine was diluted to 0.100% to which we added a fentanyl-like morphine to 50 ugr (2 ml bupivacaine 0.5%+ 8 ml of saline serum to 9 +50µg fentanyl. Induction was carried out by the administration of 5 ml fractional doses of local anesthetic (bupivacaine), until a minimum T10 sensory metameric level was obtained. Hemodynamic monitoring after initiation of analgesia (blood pressure, heart rate) was performed at least every 5 minutes for at least 30 minutes and until parameters were stable. During maintenance of analgesia and all work monitoring was maintained every 15 minutes.

The parameters recorded were the installation time, defined as the time elapsed between the test dose (T0) and the first contraction felt as painless, the metameric level of the analgesia, the quality of the analgesia, the regular evaluation of EVA at different times (T0', T5', T15', T20', T30', T60', T120', T180', T 240'), the assessment of obstetric status (work progress), and the evaluation of the engine block by the Bromage score, and the sympathetic block. The maintenance of the analgesia was carried out with the self-pulsed syringe at a rate of 10 ml h-1, combining bupivacaine at 0.100% and fentanyl at a dosage of 2 to 3 gr/ml, with the possibility of re-injections of additional bolus for the management of analgesia.

Systematic research has been carried out into adverse effects (nausea, vomiting, pruritus, drowsiness and chills), the calculation of the total duration of the delivery and its mode (the low way or caesarean section), the use of instrumental maneuvers such as forceps.

The newborn's condition was appreciated by Apgar's score in the first and fifth minute.

In situations of indication of the high way during labor, was proceeded to the extension of the epidural analgesia, according to the degree of urgency, either in epidural anesthesia or general anesthesia. The extension of the epidural analgesia into epidural anesthesia was ensured by the use of lidocaine 2% (15 to 20 ml) in order to reach a higher sensory block reaching T4-T5. General anesthesia was chosen when the time between obstetric decision and extraction was less than 10-15 minutes. A simple questionnaire by answering with the affirmative or the negative on the knowledge of the technique and their three alternatives of acceptability: Refusal of the technique - Agree to benefit from the technique on proposal - Applicant of the technique. Maternal satisfaction

through the possibilities of response: not satisfied - moderately satisfied - very satisfied.

III. RESULTS

The parturients were young, the average age was 28.1 [23.2-33] years. The median is 35 years, with 50% of women under 35 and 50% over 35. The modal age class is [25- 29] years, which represents a frequency of 44.1%. Fig.1. Since the morphological characteristics of the study population were taken into account, taking the body mass index (BMI) as a reference, our partners had an average BMI of 28.26 kg/m². The most common BMI class is [25.0 -29.9] kg/m². Parturients were overweight in 43.3% of cases ; morbid obesity accounted for only 1.7% of the study population. Fig.2

On examination and interrogation, the majority of cases have no medical history in 85% of cases. In contrast, those with a medical condition accounted for only 15% of cases. However, only one medical history is reported per parturient. Diabetes, mainly gestational diabetes and insulin dependent diabetes represents 11% of all parturients who had pathologies at the time of delivery. In contrast, diabetes is balanced at the time of admission. High blood pressure is present in 44.4% of cases without noticeable imbalance. It was part of a preeclampsia diagnosis in 11.1% of cases. The low birth had no particularities noted by obstetricians. Parturients had asthma and hypothyroidism in 22.2% and 11.1% of cases with no maternal impact respectively Fig.3. Maternal history was not a contraindication to the introduction of epidural analgesia.

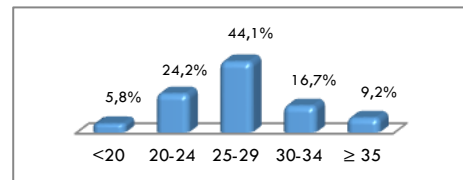


Fig. 1. Distribution of the population by age group

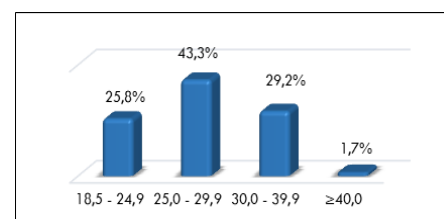


Fig. 2. Distribution of percentages by BMI body mass index (Kg/m²).

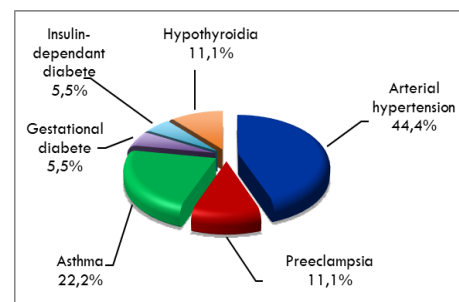


Fig. 3. Distribution of Female Partners by History

In our population, epidural analgesia was aimed at all parturients regardless of the number of acts. The most frequent class of gestures was the first and second gestures. The second gesture accounted for 40% of cases, followed by the parturients admitted for a first gesture in 35% of cases Fig.4.

Parity in the population represents a great variability: parturients who benefited from more epidural analgesia were nullipares in 41.7% of cases and primipares in 38.3% of cases, followed by multipares, respectively, P2 (13.3%), P3 (5%), and P5 (1.7%) Fig5. The average parity was 1.6 ± 0.5 .

The obstetric presentations were of the cephalic and mono-fetal type. The presentations of siege, twin or multiple pregnancies and pregnancies on scar uterus were considered by the obstetricians, of our structure, as low-risk delivery situations and therefore indications of the upper route. Cervical dilation estimated by the obstetric examination, before the epidural analgesia is put in place, attesting to the effective entry of the parturient into labor. It is appreciated with the intensity of pain (EVA), and is a key factor in the decision to start an epidural analgesia. The BISHOP score is used to assess the quality of local obstetric conditions.

It is usual to judge that these same local conditions are favorable for a score of 6. The average dilation in our parturients at admission is on average 4.11 cm [2.67-5.54] cm. The cervical dilation class at 4 cm was the most common (55%) Admission to the work room before epidural analgesia. Parturients were admitted with 3 cm cervical dilation in 17.5% of cases, and 5 cm dilation in 27.5% of cases Fig. 6.

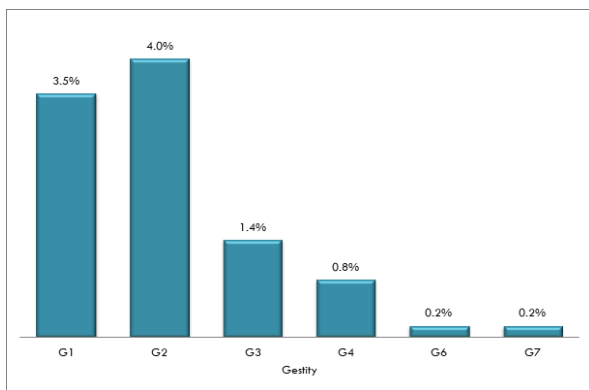


Fig. 4. Distribution of the parturients according to the gestity

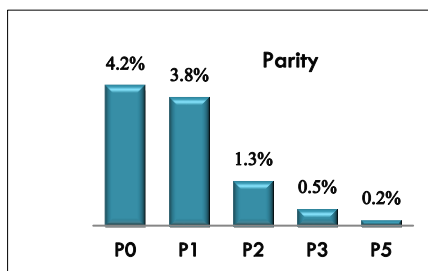


Fig. 5. Distribution of the percentage of parturients according to parity

The APD was applied at the beginning or full active phase of obstetric work in the birth room, starting from 3 to 4 cm of cervical dilation. Moreover, all our partners admitted with

these cervical dilations had painful work or hyperalgetic, thus constituting a broad and desirable indication of the introduction of epidural analgesia to obtain relief of the pain of childbirth.

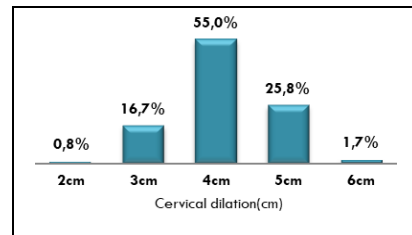


Fig. 6. Cervical dilation (centimeters) at the admission to the birth room before the start of the epidural

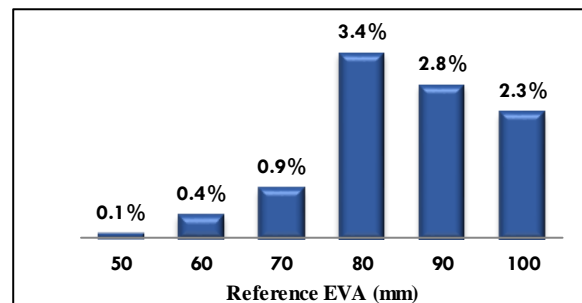


Fig. 7. Distribution of percentages according to the Reference EVA (Assessment of pain before starting PDA in the birth room)

In our population, the evaluation of pain by the analog visual scale before the epidural analgesia was applied, found an average EVA of 85.5 ± 11.2 mm, testifying to the significant intensity of the pain ranging from severe to unbearable.

The minimum EVA in our partners was 50 mm (0.8%) and 80 mm EVA was the most common (34.2% of cases) followed by 90 mm EVA in 28.3% of cases, 100 mm EVA in 23.3% of cases, and 70 mm EVA in 9.2% of cases. Our parturients were mostly algic or hyperalgetic Fig 7.

In the realization of the APD we have favored the sitting position that allows easier localization of the landmarks. Our goal was to achieve optimal bending of the spine.

The most common puncture level was L4 L5 (98.3%) in a semi-seated position, followed by L3 L4 in 1.7% of cases. In our series, we did not have any particular difficulties when setting up the epidural because of the mastery of the technique by all Anesthesiologists. In addition, we find a difficulty of access to the epidural space by the technique of the liquid mandrel in only 15% of cases. Difficulties in locating epidural space were judged on the number of puncture attempts. The average puncture count was 1.1 ± 0.3 . These difficulties were related to clinical predictive factors of a difficult locoregional analgesia, in this case the physiological oedematous infiltration of the pregnant woman, a poor individualization of topographical landmarks, high body mass index (obese parturients), and lack of cooperation among parturients. Epidural space was found after a single puncture in 95.8% of cases, and 2 to 3 punctures in 3.4% and 0.8% respectively.

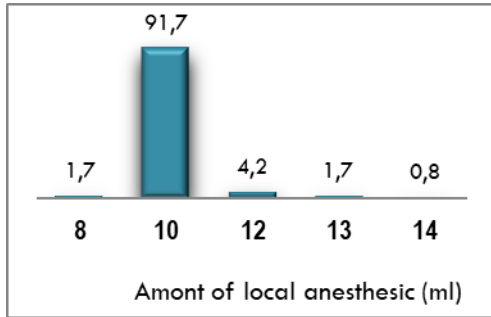


Fig. 8. Induction of epidural analgesia

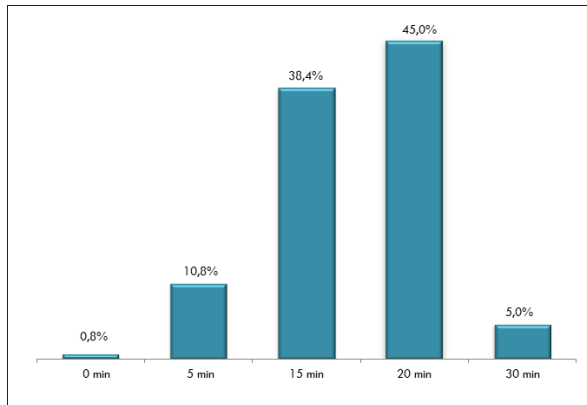


Fig. 9. Time to install the analgesia

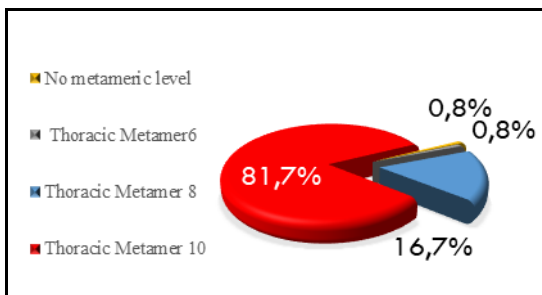


Fig. 10. Sensitivity level obtained

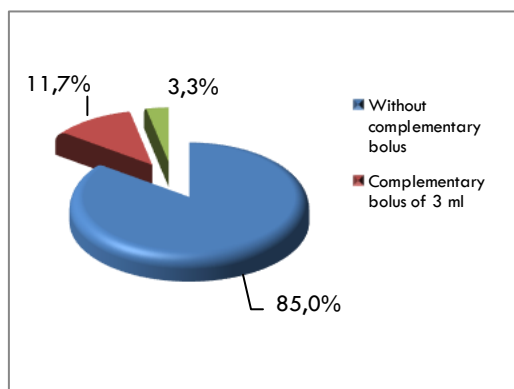


Fig. 11. Distribution of cases according to the administration of complementary bolus

The induction of epidural analgesia was performed with bupivacaine diluted to 0.100% combined with 50 g fentanyl in divided doses until effective analgesia was obtained. In our series, the volume of the 10 ml mixture used was the most

frequent (91.7%) to obtain a sensitivity level at the tenth thoracic (T10) Fig. 8. The average volume was 10.13 0.71ml. In order to obtain the same level of sensitivity, a volume of 12 ml was required in 4.2% of cases, followed by a volume of 8 ml (1.7%), 12 ml (4.2%) 13 ml (1.7%) and finally 14 ml (0.8%).

The most frequent installation time for our parturients was 20 minutes (45%) Fig. 9. It was 15 minutes in 38.4% of cases. The instantaneous installation of analgesia was observed in 0.8% of cases (1 parturient) probably related to an increased sensitivity of parturient to local anesthetics. Moreover, a delay of 5 minutes and 30 minutes was recorded in 10.8% and 5% of cases respectively. The average installation time in our population was 16.7± 5.6 minutes.

The sensory level of analgesia desirable for delivery is T10. It was sought from the induction by the evaluation of the painful and thermal sensitivity at the level of the different metamers appreciating the diffusion and the symmetrical distribution of the analgesia.

The highest level of sensitivity most frequently found was T10 in 81.7% of cases, followed by a level at T8 in 16.7% of cases. Level T6 was found in 0.8% of cases (1 parturiente), although it is above the desired level, we did not find any incidents in parturiente Fig10.

On the other hand, the failure to install the analgesia and thus without sensory level, was observed in 0.8% of cases (1 parturiente); it was a multipare (G4 P3) admitted to the birth room with a 5 cm cervical dilation and an EVA at 80 mm. And in view of the rapid progression of obstetrical work, and despite a volume at induction of 12 ml, the parturient gave birth in 25 minutes, therefore could not benefit from a rest the epidural.

Maintenance of the analgesia was carried out in our parturients with the auto-pulsed syringe from the first hour with bupivacaine 0.100% associated with the fentanyl type morphine (0.5ug/ml) in 58.3% of cases. The continuous rate of maintenance was 10 ml/hour. Parturients who gave birth within 01 hours did not require maintenance of analgesia (41.7% of cases).

During the maintenance of the analgesia the recurrence of the pain, the elevation of the EVA beyond 40 mm, complementary bolus of the mixture between 3 ml and 6 ml (bupivacaine 0.100% and fentanyl 0.5 µg/ml) 15% of the cases were needed but within 20 minutes of the last injection Fig 11. The addition of bolus did not concern parturients who had given birth in less than 60 minutes.

The recurrence of the pain, the elevation of the EVA at the expulsion phase and when the delivery seemed eminent, we proceeded to inject an additional dose of lidocaine at 2% in 21.7% of cases. The average amount of 0.100% isobar bupivacaine administered is 15.7 7.1 ml. The parturients in whom an episiotomy was necessary to complete this mode of delivery, the epidural analgesia allowed the obstetric team to perform, under optimal conditions (total absence of pain), suture of the episiotomy in 66.7% of cases.

The success rate of the analgesia was 99.2% against a rate of 0.8% which corresponds to a failure observed in a multipare parturient, which presented with cervical dilation before the

APD of 5 cm and an EVA at 80 mm. In view of the rapid progression of labor, the delivery occurred without possibility to correct in time the imperfection of the analgesia or to proceed the rest of another epidural catheter.

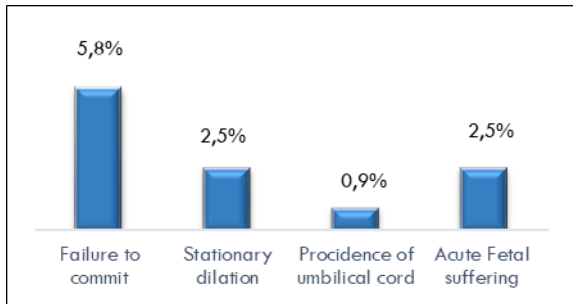


Fig. 12. Distribution of Conversion Indications in the Study Population

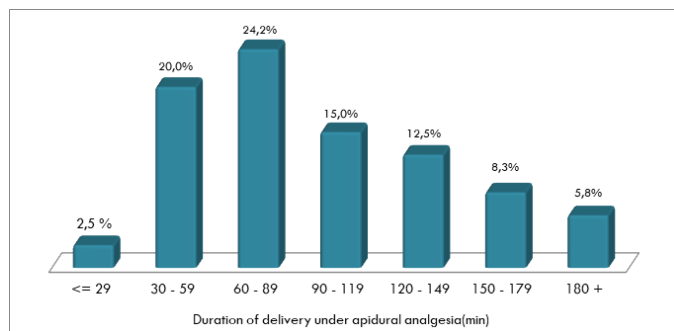


Fig. 13. Distribution by duration of delivery under epidural analgesia

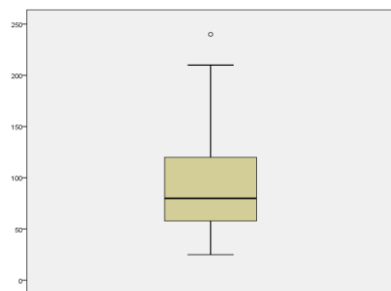


Fig. 14. Box diagram of the duration of delivery under epidural analgesia (min)

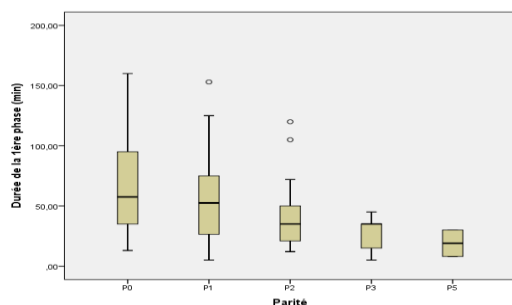


Fig. 15. Box diagram of the duration of the first stage of the delivery (min)

Of the total population studied, low-level delivery occurred under epidural analgesia in 88.3% of cases. Conversion from low to high for obstetric indications was observed in 11.7% of cases were obstetric and fetal Fig12. The percentages over all parturients we find the lack of engagement in 5,8% of cases, stationary dilation in 2.5% of

cases, cord procidence 0.9% of cases, and acute fetal pain in 2.5% of cases.

The extension of the epidural analgesia, was completely functional at the time when the indication of caesarean section was placed with an EVA of 20 to 30 mm, in surgical epidural anesthesia was possible in 78.6% of cases, against the extension in general anesthesia in 21.4% of cases (3 partners). This type of extension allowed us to avoid, proportionately, the general anaesthesia (GA) which remains associated with a strong maternal morbimortality.

With this in mind, depending on the degree of urgency, and the time between obstetric decision- fetal extraction, we extended the PDA into epidural anesthesia when the delay was greater than 15 minutes. However, if the delay was less than 15 minutes, general anesthesia was required.

We performed a general anaesthesia for a procidence of the cord, for a parturient with a vital fetal emergency announced, which was not to suffer any delay in a parturient with t15 minutes of epidural analgesia with an EVA rated at 50 mm. Elsewhere, in situations of acute fetal suffering, although we could convert to high under epidural anesthesia, we could not oppose the decision of the obstetricians on extraction in very short time and therefore we performed a general anaesthesia.

A situation of SFA or the obstetrician was reassuring about the momentary regression of RCF abnormalities, the conversion to caesarean section was performed under epidural anesthesia.

In order to achieve the extension of the epidural analgesia, the local anesthetic we used was lidocaine 2%.

The volume administered before the incision was 20 ml divided into two 10 ml bolus: the first in the birth room and the second in the operating room and the anaesthesia was obtained in 8 minutes with a sensitivity level of T4 to S5 and a symmetrical motor block evaluated by the Bromage score.

The anaesthesia was rated of excellent quality and made it possible to perform fetal extraction in good maternal conditions. For other indications, failure of engagement and stationary dilation extension in epidural anesthesia was easily performed in the operating room.

The average duration of the analgesia was 88.9 ± 47.4 minutes. The median of the delivery time was 80 min so 50% of the deliveries had durations less than 80 min Fig 13-14.

The modal class of delivery time was [60 89] min in 24.2% of cases, followed by classes [30 59] min and [90- 119] min or 20% and [180 min and more] for a frequency of 5.8%.

The average duration of the first phase in our partners was 55.04 ± 36.20 min [5,160] and seemed to be influenced by parity since the multipares had shorter work in its first stage Fig 15. The average duration of the second phase of work was 34.0 ± 19.0 minutes with a minimum average duration of 10 minutes and a maximum duration of 60 minutes Fig16.

By comparing in our population the average duration of the second phase between primipares and multipares, a significant difference was noted, primipares had an average duration longer than multipares ($P < 0.0001$)

The analgesia was evaluated before and after the induction of the analgesia by interviewing the parturient and using the

Analogue Visual Scale (reference EVA before the placement of the epidural analgesia, EVA under epidural analgesia). We paid particular attention to the first uterine contractions after the analgesic induction, which, when they became shorter and less painful, showed the installation of the analgesia.

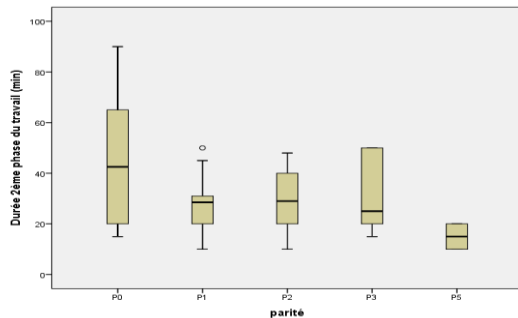


Fig. 16. Box diagram of the duration of the second stage of the delivery (min)

In addition, when assessing the upper and lower sensory level of the analgesia, the analgesic post-induction vaginal examination became less or completely painless was also a criterion for the effectiveness of the analgesia.

The baseline average EVA pain assessment, based on parity across all parturients, prior to epidural analgesia Tab 1, found scores of 80 mm (34.2% of cases) followed by a score of 90 mm in 28.3% of cases, and 100 mm in 23.3% of cases.

TABLE 1. Baseline Visual Scale Before Epidural Analgesy by Parity

Parity	Reference EVA					
	5	6	7	8	9	10
Po (%)	2,0	4,0%	6,0%	22,0%	28,0%	38,0%
PI + (%)	0,0%	4,3%	11,4%	42,9%	28,6%	12,9%
Total	0,8%	4,2%	9,2%	34,2%	28,3%	23,3%

By comparing the reference mean EVA of the parturients according to their parity; the nullipares had EVA at 80mm in 22% of cases, 90 mm in 28% of cases, 100 mm in 38% of cases, and EVA 70 mm in 12% of cases. Primipares and multipares, on the other hand, had 80 mm EVA in 42.9% of cases, 90 mm in 28.6%, 100 mm in 12.9% of cases, and 70 mm EVA in 15.7% of cases.

Nulliparous parturiers had a more painful job than multipares. The difference was statistically significant ($p < 0.05$).

The average EVA was evaluated during delivery under epidural analgesia to monitor its evolution. The repetition of this evaluation during labor made it possible to judge the effectiveness, to detect the decrease and appearance of the imperfections of the analgesia.

At t30 minutes and t60 minutes: average EVA at 30 mm was the most common (32.5%).

At t90min and t120 min: average EVA at 20 mm was the most common (45.5%).

Mean EVA at 0 mm (no pain) was most common from 240 min and up.

As a function of the length of delivery, the percentage curve of the mean EVA over time, obtained in parallel with the relief of labor pain, showed a significant downward trend in the EVA Fig 17-18 figures.

The analog visual scale was also measured with full cervical dilation. An EVA at 20 minutes and 30 mm corresponded to 43.9% of cases and 23.7% of cases respectively. The average EVA was 19.4 ± 10.8 mm.

We recorded in our series, the occurrence of a sympathetic block with a drop of 20% to 30% of blood pressure compared to the initial values, in 10% of cases.

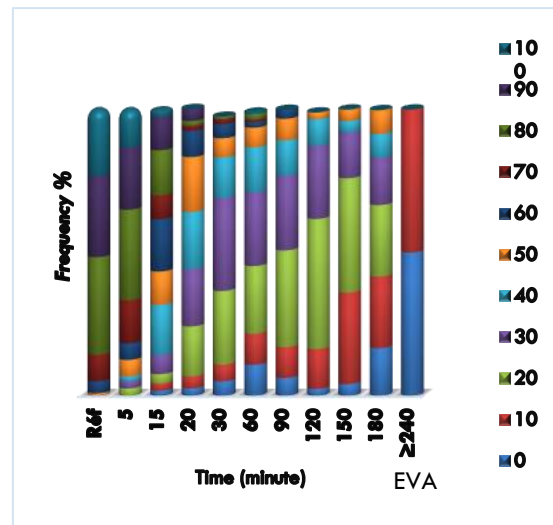


Fig. 17. Evolution of EVA under epidural analgesia

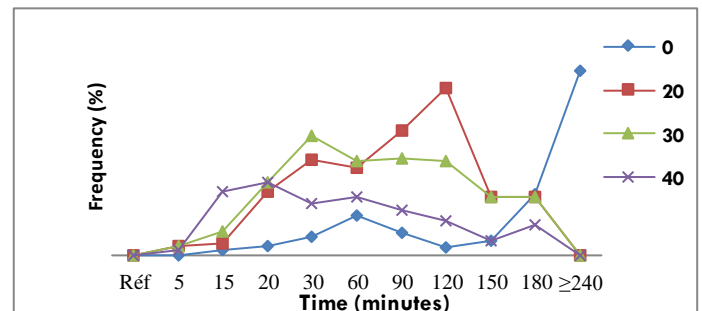


Fig. 18. Evolution of EVA Objective under epidural analgesia

This drop in blood pressure values was quickly corrected by the use of ephedrine-type vasoconstrictors, intravenously, bolus. This measurement was associated with oxygen therapy of 3 6 litres/min, administered by nasal tube. For the parturients who had presented a sympathetic block had systematically benefited from injection of vasoconstrictor bolus type ephedrine 6 mg and a filling with saline serum 9 .The rigorous and systematic search of the engine block, it was recorded in our population its occurrence in only 1.7% of cases, respectively at:

t90mn: occurrence of a partial degree engine block estimated at 33% on the Bromage score or grade 6 on the modified Bromage score, in a primigeste, and which required a decrease in the rate of maintenance of the analgesia until the engine block disappeared. After the reassessment, we resumed maintenance of the analgesia which was adequate with a concentration of 0.100% bupivacaine until delivery.

t40mn: After induction of analgesia, we noted the occurrence of a partial degree motor block estimated at 33% on the Bromage score or grade 6 on the modified Bromage

score, unilateral in a primigeste. After a negative suction test, we performed a slight removal of a few millimeters of the epidural catheter followed, after about ten minutes, by the disappearance of the motor block. The analgesia was of good quality (EVA = 30 mm) and delivery occurred within 20 minutes. The use of instrumental maneuvers (forceps) was carried out in a primigeste in labor admitted in the birth room with an EVA at 90 mm and a cervical dilatation at 4 cm. The epidural analgesia was put in place and induced by 10 ml of bupivacaine at 0,125% plus fentanyl at 50 µg. At t20mn, the EVA was at 30mm. At full expansion, the EVA was at 20mm.

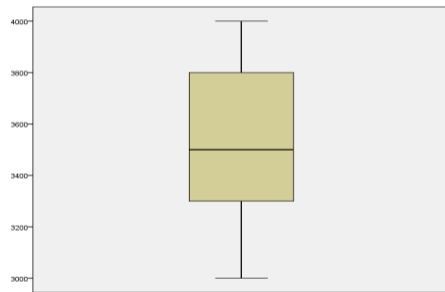


Fig. 19. Box diagram of birth weight (grs)

At the expulsion phase, a severe fetal bradycardia was detected, the obstetric team performed an episiotomy and the application of forceps to the expulsion phase, which allowed the birth of a child in apparent state of death with a double circular and shoulder strap of the umbilical cord and presenting a generalized emphysema. Despite the cardiorespiratory resuscitation maneuvers we lamented the death at 30 minutes of life. The delivery time was 75 minutes.

In addition, we collected side effects due to analgesia, such as the presence of maternal pruritus, hypotension, during labor, as well as possible complications in the post-partum. In our population, epidural analgesia was without adverse effects in 93.6% of cases; however, some effects were noted in this case pruritus (0.8%), slight drowsiness (0.8%), chills (2.4%) were also noted Table 2.

TABLE 2. Distribution by occurrence of other adverse maternal effect

Side effects	Number	%
No Side effects	112	93,6
Pruritus	1	0,8
Slight drowsiness	1	0,8
Fever	0	0,0
Chills	3	2,4
Lack of maternal cooperation with expulsion associated with abdominal expression	3	2,4
Urine retention	0	0,0
Duremerian breach	0	0,0
Nausea and vomiting	0	0,0
Total	120	100

All these events, which occurred in parturients who gave birth beyond the 90th minute, were without maternal consequences having evolved favorably, and for which we recommended close monitoring, a passive warming for chills, Maintaining verbal contact and psychological support for those with mild drowsiness.

The lack of cooperation in the expulsive phase was noted in 2.4% of cases (two primipares and one nullipare). A circular situation with drawstring strap was the cause of difficulty in eviction. No cases of Duremerian breach, urine retention, nausea and vomiting were observed in our parturients.

Obstetricians proceeded to the immediate assessment of newborn status by the Apgar score at one minute and five minutes. In our series the neonatal assessment had shown the absence of fetal resounding epidural analgesia. The Apgar score of 9/10 was the most common of 53.3% of cases, followed by the score of 10/10 in 35% of cases, and the score of 8/10 in 9.2% of cases at the first minute. The average score was 9.15 1.09. The Apgar score of 10 was 99.2% dominant. The average score was 9.92 0.91. The birth weight of all newborns was 3535.8 271.2 g with a median of 3500g. Fig. 20.

A neonatal complication occurred in a parturient benefited from an effective epidural analgesia with a correct workflow of her work. The expulsion phase was marked by the detection of fetal suffering which motivated the obstetrics team to practice a forceps that allowed the extraction of a newborn in respiratory arrest and severe bradycardia (Apgar score of 0/10). At the origin of this acute fetal suffering was a double circular umbilical cord. The second child was born by caesarean section indicated for a defect of engagement performed by extension of the epidural analgesia in epidural anesthesia. His Apgar score at one minute was 7/10. The newborn was transferred to neonatology and placed under surveillance. The evolution was favorable.

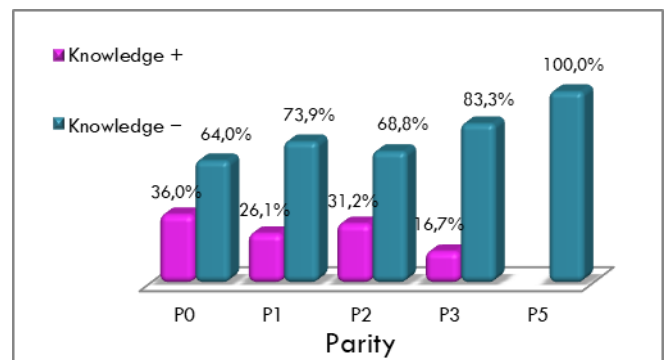


Fig. 20. Distribution of technical knowledge according to parity

At the interrogation of all the parturients ,the notion of ignorance of the epidural analgesia allowing the management of the pain of delivery in 70% of cases. In 30% of cases, the parturients claimed or were in possession of some vague information about the technique.

The distribution of the knowledge of epidural analgesia in our series showed that in 36% of cases the nulliparous parturients P0 (n=50) knew the technique of analgesia against 64% who did not know. Among primiparists (n=46) 26.1% were familiar with the technique compared to 73.9%. For P2 (n=16) and P3 (n=6), they are informed of the technique in 31.2% and 16.7% respectively of cases Fig.20.

We objected that knowledge of the technique was more marked in nullipares and primipares Fig.20. In a second step,

and after analyzing the knowledge of the technique among our parturients, the acceptability of benefiting from epidural analgesia in our population had found that, 88.3% of the women had accepted on offer the delivery in this form of analgesia. Female applicants accounted for only 11.7% of cases.

The parturiers who claimed to know the technique were not necessarily demanding, had accepted on the proposal of the anesthesia team.

In our study population, only 18% of nullipares (N=50) were seeking epidural analgesia. In addition, 6.5% of cases for primipares (n=46) and 12.5% of cases for second pares (n=16) were in demand.

On the whole, there was no significant difference in acceptability according to parity and age Fig.21. More than 82% did not refuse to benefit from the technique and had willingly accepted on the proposal of the anesthesia team. This acceptability was motivated by the intensity of the pain of obstetrical work. The desire to benefit from an epidural analgesia was found only in nullipares, the second and third paires. The lower the parity, the stronger the demand.

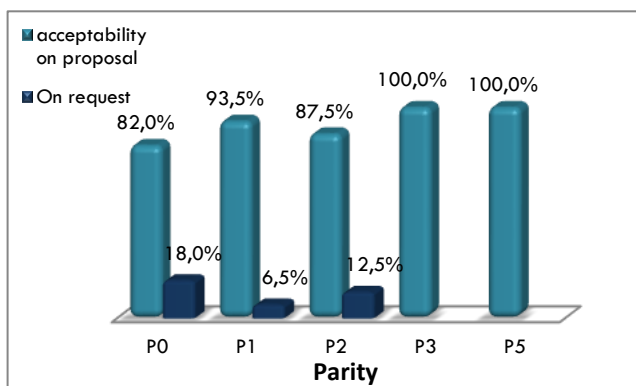


Fig. 21. Distribution of the acceptability of the technique according to parity

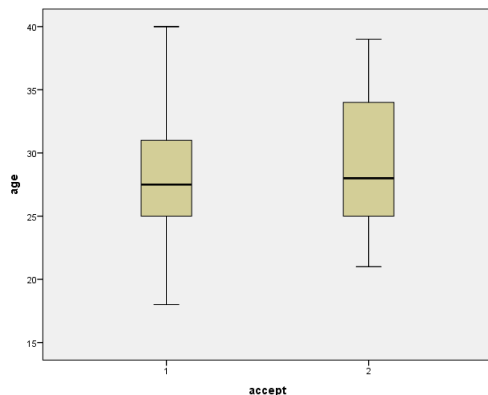


Fig. 22. Box diagram of age acceptability

The acceptability of the population of parturients according to age, there was no significant difference between those who requested analgesia and those who agreed to benefit from it on the proposal of the anesthesiologist. Fig.22 (diagram).

The overall satisfaction of the parturients was assessed in the immediate post-partum and in the hours following the

delivery was measured a numerical scale from 0 to 10 in ascending order of satisfaction.

A value strictly below 5 indicated dissatisfaction.

The choice of 3 semantic answers was applied for a practical order:

- Not satisfied or dissatisfied
- Moderately satisfied
- Very satisfied

The assessment of the satisfaction of our population was based on pain relief thanks to the measurement by EVA at different times of work, the overall experience of the technique, and the presence of anesthetic, obstetric or neonatal complications.

Women who were very satisfied with pain management during labour and delivery accounted for 96.7% of the study population. The quality of the overall management of pain in the birth room therefore appears to be satisfactory for the study population Fig.23.

The very satisfied semantic response was most common among nullipares (n=50), 96% of cases and multipares, respectively for P1 (n=46) 100% of cases; for P2 (n=16) 93.8% of cases; for P3 (n=6) 83.3% of cases, for P5 (n=2) 100% of cases Fig.24.

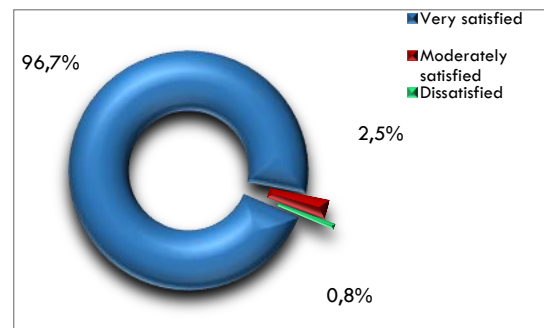


Fig. 23. Maternal satisfaction after delivery under epidural

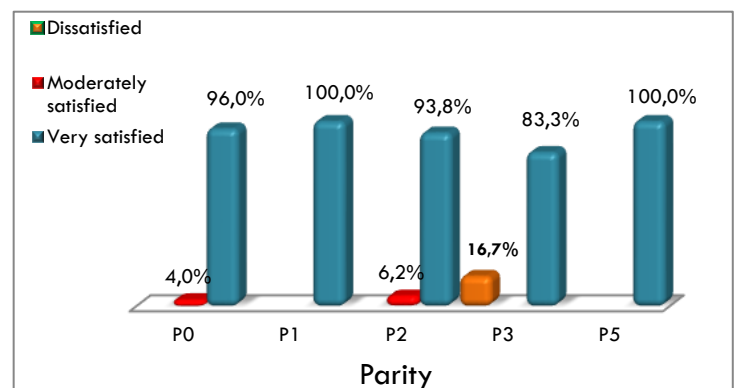


Fig. 24. Gender Distribution of Satisfaction

Dissatisfaction was found in the second pares for cases of procidence of the cord (conversion in emergency to general anaesthesia), the total failure of the technique in a multipare, and a lower delivery more instrumental maneuver (Forceps) with SFA.

In our study population, maternal satisfaction judged by the quality of the analgesia, which is judged by EVA.

The evolution of the analog visual scale shows that the decrease in its numbers is associated with a high degree of maternal satisfaction. Conversely, less satisfaction or even dissatisfaction is found when there is a lower quality of analgesia Fig. 25.

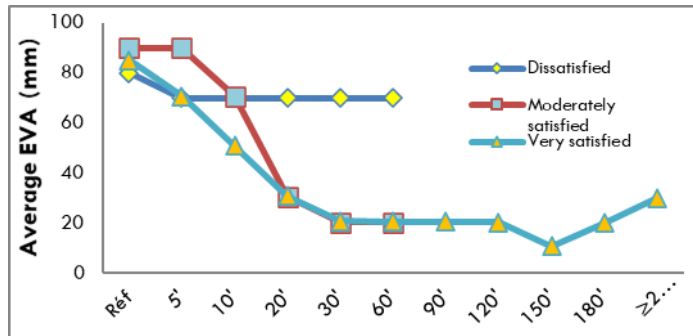


Fig. 25. Satisfaction of the parturients according to the evolution of the average EVA during the epidural analgesia

IV. DISCUSSION

The results thus obtained could be compared with those of the literature dealing only with epidural analgesia in developed countries with strong achievements of this type of analgesia where trials and studies are multiplying and becoming more frequent.

The average age in our series is similar to the average age found in different studies. In the Canadian double-blind randomized study by ROBERT D.E, on continuous infusion for epidural analgesia using a mixture of bupivacaine and fentanyl, on 75 nulliparous women. The average age recovered is 26 ± 5.0 years [1]

The average age found by HERMAN. N is 28.2 ± 7.0 years in the American randomized controlled double blind study conducted at the Department of Anesthesiology, The New York Presbyterian Hospital- Cornell University Medical Center of New York, effective doses of fentanyl or sufentanyl with bupivacaine 0.125% for analgesia of work with 100 partners [2]. The mean age was 22.2 2.0years in the randomized and controlled prospective Turkish study conducted IZMIR gynaecology and obstetrics department of GENC, (2014, n=100), [3].

In our series, the study was aimed at all parturients regardless of their parity. We find an identical population distribution of two studies. HERMAN's double-blind randomized controlled study. N, PARTURIENTS were represented by 40% nullipares and 60% multipares [2], and in the Togolese study of PILAKIMWE EPBOHOU [4] where the study population consisted of 35% nullipares and 50% multipares.

In our series, parturients were admitted to the active phase of obstetric work and cervical dilation was 4 cm in more than 50% of cases. The data from the literature corroborates our results in our partners. The admission cervical dilation score reported in the studies was also considered inclusion criteria.

Based on the evaluation by the analog visual scale, considered as the gold standard in the evaluation of pain, the vast majority of our parturients had an algic or hyperalgic work. We find in the literature similar figures of EVA

quantified before the introduction of epidural analgesia. The Canadian study by ROBERT D. E [1], in which the parturients assessed the intensity of their pain at T0 mn, averaged 80 mm.

The volume of epidural analgesia induction in our series was administered progressively in divided doses with repeated aspiration tests, allowing to obtain a sensitivity level at T 10, was 10ml. This same volume is found in the studies of HERMAN. N [2] and the study of PILAKIMWE EPBOHOU [4]. For the management and maintenance of the analgesia to avoid the pitfall of the analgesia hiatus was carried out in our parturientes at the syringe at On the obstetric level, the caesarean section during work could be decided when the obstetric team had considered that low birth was not an option. We find a conversion rate is roughly comparable to that of the Canadian study by ROBERT aucours de la voie haute, in which the high road represented 13% [1].

The results of our study about indications of conversion to caesarean section are different from the series published in the literature that could be explained by management of the analgesia protocol from one team to another and possibly by the size of the study population.

The majority of our partners had come to the active phase. Our study is particularly characterized by a shorter duration of the first phase of work compared to the figures reported in the far superior literature and which could be explained by the use of oxytocics, the modality of direction of work by the sagefemme, and the active participation of our parturientes during the delivery, ROBERT [1].

For the average duration of the second phase we also find a significant difference in the average duration between primipares and multipares. It was longer in primiparas than in multipares ($P < 0.0001$). However, in the literature, we find times of the second phase higher than our results. ROBERT [1]

An average time of 29.6 ± 43.0 minutes in the second phase of the GENC study [3]; most likely due to continuous uterotonic infusion.

In the evaluation of pain by analog visual scale under epidural analgesia our choice of tool was the analog visual scale, which involves a visual graphic element and therefore very easy to understand, requiring little explanation and therefore has a lesser effect on the response of the parturient. In the literature, several studies show the significant decrease in pain scores and substantially identical to those recorded in our series. [1] [2]

The occurrence of the engine block is a common adverse effect in obstetric epidural analgesia that can hinder the progress of work. Our results are inferior to those described in the literature, which can be explained by the nature of the protocol, induction and maintenance of the analgesia without obscuring the complementary doses of the local anesthetic in case of analgesia imperfection according to each study. [2]. In the FINEGOLD study . H [7]

Our study is characterized by a low rate of use of instrumental maneuvers. It was 45% in the GIRARD study [8].

In the neonatal assessment, neonatologists in collaboration with the sagefemme ensuring the reception of newborns, had

relied on the use of the Apgar score. Our results were similar to those found in the literature and place our series among the studies that have shown the safety and safety of the epidural analgesia. GENC M [3] DHARA PATEL [9].

It emerges from the interview with our partners that, epidural analgesia is virtually unknown. Epidural analgesia was the best-known technique of all obstetric analgesia methods in only 30% of our partners and who were not systematically asking. In the prospective and descriptive study of OURO-BANG [10], only 12% indicated that they were aware of the existence of means to combat the pain of childbirth.

The level of technical knowledge, regardless of age, socioeconomic status was very low in almost all parturients. 98.5% had no idea about analgesia for obstetric work as revealed by the SHIDHAY study [11]

Our parturients, had responded favourably to the proposal of epidural analgesia, acceptability was not influenced by the parity and age of our parturients and places our results in proportions similar to those found in the literature [12].

By comparing the results of our study on the notion of demand for epidural analgesia by parturients are much lower than those found in the PALOT literature [12] [13] This could be explained by the lack of awareness among expectant mothers and the lack of quality information on awareness on the part of obstetricians and midwives during prenatal consultation, which seems to influence the level of demand.

Satisfaction is defined as the assessment of a patient's emotional response to different aspects of care [14]. Satisfaction expressed on the basis of pain relief, positive experience and effectiveness of the procedure, absence of maternal and fetal complications. Very satisfied was a high percentage. These results are consistent with previous studies that show that the effectiveness and accessibility of analgesia and the good quality of the management of parturients are major determinants of maternal satisfaction. Nevertheless, our study presents a number of limitations in the systematic follow-up of parturients in case of rapid return to home and the measurement of maternal satisfaction was carried out by an anaesthetist physician and not by a neutral and blind evaluator course of the epidural analgesia. This may possibly influence the respondents' responses and exaggerate the positive perception of management. The satisfaction rate was high despite the exclusively quality-oriented character of the epidural analgesia and so it seemed difficult to us to affirm that the good result of our study, in terms of maternal satisfaction is the faithful reflection of pain management. The quality of the relationship between the partners and the medical staff, the continuous presence and the psychological support certainly contributed to the achievement of such a level of satisfaction.

We have a number of studies assessing maternal satisfaction. Thus in the study of PILAKIMWE EPBOHOU [4] maternal satisfaction was assessed the day after the epidural installation on a numerical scale from 0 (not at all satisfied) to 10 (fully satisfied). In the BEATRICE GIL-WEY [15] study, satisfaction was measured using a numerical scale from 0 to 10 (0= not at all satisfied, 10=fully satisfied) 24

hours after delivery. A value of 6 was used to indicate dissatisfaction. Factors predicting maternal satisfaction were identified, including pain, overall experience of the technique, wait times, presence of anesthetic complications, obstetrics or neonatal and any difficulties in interacting with the anesthesia team.

V. CONCLUSION

Obstetric pain work is undeniably one of the most painful experiences and its management remains a major objective for anesthesiologists obstetricians and sagefemmes.

Pharmacological and non-pharmacological techniques have been developed for the management of the pain of childbirth but epidural analgesia remains a technique of choice in the birth room. The use of low concentrations of local anaesthetics combined with morphine has improved analgesic efficacy, to demonstrate the positive impact of this type of therapeutic approach on the mother and foetal, while limiting or even abolishing the impact on the progress of obstetric work, the mode of delivery.

Pain assessment is the cornerstone of any analgesic practice, especially in obstetrics. To this end, several methods and tools have been proposed to parturients and medical staff to evaluate and quantify pain as much as possible. Among the many scales that find their full place in clinical practice are those that focus on self-assessment such as the analog visual scale, the digital scale and the simple verbal scale.

Accessible, accepted and effective epidural analgesia, the positive experience of delivery by the parturients and the absence of complications are major determinants of maternal satisfaction.

Through this work we hope to encourage the support and involvement of medical professionals in order to constitute a safe draft to promote the practice of epidural analgesia in our public hospital structures.

Applied to our parturients referred in obstetrics, the epidural analgesia adopted by our team made it possible to conduct this study which specified several points including the epidemiological profile of the parturients proposed to benefit from this technique, the expected benefits, the positive impact on the experience of childbirth, maternal satisfaction and the absence of neonatal impact.

Moreover, we find through this study that our parturients are young, mostly without a history likely to counter-indicate our therapeutic approach, presenting in the birth room with algic obstetric work or hyperalgie. The 0.100% bupivacaine protocol associated with fentanyl-type morphine resulted in adequate analgesia.

Epidural analgesia was unknown to most of the parturients was accepted on the proposal of the anesthesiologists reanimators without any influence of age and parity. The high overall satisfaction of the parturients is the result of the quality of the management of pain in the birth room. In the end we advocate through this work in favor of the implementation of the protocol of epidural analgesia for delivery making the management of parturients on the obstetrical and anesthetic level as complete as possible.

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