



# NARCHI BULLETIN

SJH, Issue 5, September 2019

REACHING THE UNREACHED  
NARCHI



Delhi Branch



**Labor Management:  
Newer Perspectives**

**NARCHI Delhi Secretariat**

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# President's Message



Greetings to all my beloved NARCHI members!

We all embark together into the festive spirit of the forthcoming months, bringing with it the joy and prosperity. We have achieved many milestones as a team in our endeavor of reaching the unreached. We enthusiastically continue our outreach programs with anemia awareness camps, cervical cancer screening camps, adolescent health educational programs, and ASHA workers training.

We are all set to host the **26<sup>th</sup> Annual NARCHI Conference** in November 2019, themed '**Postpartum period – The crucial six weeks**'. Postpartum period is a pertinent and a relatively untouched topic, but it indeed is the most inevitable & crucial part of the life cycle of a woman, which if left uncared for, can lead to lifelong implications.

This conference is just a trailer; the big one is yet to follow, "**NARCHI World Congress**" in November 2020. You have the golden opportunity to get **FICMCH** in Delhi itself, during the NARCHI World Conference.

Eagerly waiting to see you now for the Annual Conference, know all about puerperium, and then in the World Congress for an academic grandeur.

*Achla*

**Dr Achla Batra**

Mark Your Calendar  
20<sup>th</sup> - 22<sup>nd</sup> November, 2020  
for  
NARCHI World Congress 2020  
in New Delhi to be organised by  
NARCHI DELHI

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# Secretary's Message



Greetings from NARCHI Delhi !

We wish you all season's greetings for the upcoming festivals. We meet you again through this fifth quarterly issue of NARCHI Delhi bulletin dedicated on **"Labour Management – Newer Perspectives"**. Our dedicated editorial team have once again chosen such a vital topic which is essential for all practicing obstetricians.

Over the years, as obstetric techniques have advanced and the spectrum of obstetric services has increased there has been much debate and deliberation on the increasing interventions in obstetrics and due concern has been raised about the alarming rise in caesarean deliveries almost all across the globe. With all the updates and evidences in this field, there is a need to develop good clinical practice protocols best suited in Indian scenario.

The editorial team has come up with some really interesting topics in this issue. I hope the readers will enjoy reading this issue and update with the recent advancements in labour management.

Further, living upto our NARCHI Delhi motto of 'Reaching the Unreached' like before we have been organizing health camps, public forums and CMEs on important aspects of mother and child health, glimpses of which you will find in the event section of this issue.

We are gearing up for our **26<sup>th</sup> Annual NARCHI Delhi Conference** in November 2019 with interesting workshops on 'Knots and Sutures', 'Menstrual Hygiene', 'PPH' and 'Basics of infertility'. We invite you all to register for the same and enjoy brilliant academics in store.

Also, we urge all of you for maximum participation in **"NARCHI World Conference 2020"** to be held in November 2020, which will also be a good opportunity for the interested

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practitioners and institute faculties to obtain ICMCH (Indian College of Maternal and Child Health) fellowship.

Wishing you all a happy reading.

**Dr Monika Gupta**

“The wisdom and compassion a woman can intuitively experience in childbirth can make her a source of healing and understanding for other women.”—**Stephen Gaskin**

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# Editor's Message



Greetings from the editorial team! With this bulletin we start our journey towards another year filled with academic feasts. We continue our venture to update our readers with the advancements in the field of obstetrics.

The focus of this month's bulletin is on "Labor management". As obstetricians we are all aware of the importance of intrapartum period in a woman's life. What a woman expects from us is physiological labor and involvement in the decision making. The emphasis these days is on providing a positive childbirth experience to the woman during labor.

World Health Organization emphasizes on minimal interference during labor of low risk women as many women may progress at a slower pace without affecting the labor outcome. This issue highlights new perspectives in intrapartum care, the definition and management of abnormal labor and reviving the lost art of operative vaginal deliveries in order to reduce unnecessary caesarean sections. Labor management is not complete without fetal monitoring; therefore, the CTG definitions and description along with interpretation of the findings that are benign but if not carefully analysed may lead to unnecessary interventions, are also included.

Wish you happy reading.

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“Birth isn’t something we suffer, but something we actively do and exult in.”—**Sheila Kitzinger**

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# Intrapartum Care - New perspectives

**Aakriti Batra<sup>1</sup>, Achla Batra<sup>2</sup>**

<sup>1</sup>Senior Resident, <sup>2</sup>Professor VMMC & Safdarjung Hospital

Intrapartum care refers to the medical and nursing care given to a pregnant woman during labor and delivery. It extends from the beginning of contractions that cause cervical dilation to first 1 to 4 hours after the delivery of newborn and placenta.

Women want a 'positive childbirth experience' that fulfils or exceeds their prior personal and socio-cultural beliefs and expectations with continuous emotional support from a birth companion and technically competent clinical staff. They want a physiological labour and birth, and to have a sense of personal achievement and control through their involvement in decision-making, even when medical interventions are needed or wanted. Increasing medicalization of childbirth processes occurring in the prevalent obstetrics care tends to undermine the woman's own capability to give birth and negatively impacts her childbirth experience.

Our patients and their labors have changed on a global scale but to date the concept of "normality" in labour and childbirth is not universal or standardized. There has been a substantial increase over the last two decades in the application of a range of labour practices to initiate, accelerate, terminate, regulate or monitor the physiological process of labour, with the aim of improving outcomes for women and babies. Recent studies suggest that the benchmarks for assessing normal labour progression are derived from studies conducted over 60 years ago, may not be appropriate for clinical decision-making for individual women.

The newer perspectives in intrapartum care include newer terminology, duration of first and second stage, rate of progress of labor in latent and active phase, monitoring of progress of labor, monitoring of fetal wellbeing, position of women while birthing, techniques of labor augmentation and the most important the concept of positive

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pregnancy outcome and respectful maternity care.

**Terminology:** Abnormal labor, dystocia, failure to progress, have been replaced by term, protraction disorders (i.e., slower than normal progress) and arrest disorders (i.e., complete cessation of progress of labor).

**Labor Progression:** According to the standard Friedman partogram, 4 cm is the cervical dilation where there is a transition from the latent to the active phase of labor. However, Zang et al recommended 6 cm as the end point of the latent phase based on their study on 62,000 labors. WHO guidelines (2018) have adopted 5 cm as cut off for the end of the latent phase. Therefore the use of medical interventions to accelerate labor and birth (such as oxytocin augmentation or caesarean section) before this threshold is not recommended, provided fetal and maternal conditions are reassuring.

**Duration of First Stage:** It is important for obstetricians to know when labor is progressing too slowly, so that they can optimally manage protraction and arrest disorders of the first stage, thereby improving maternal and newborn outcomes. Based on data from the mid-20th Century, Friedman reported that active labor was associated with a rate of cervical change of  $>1.2$  cm/hr in nulliparous and  $>1.5$  cm/hr in multiparous women. Recent data shows that normal labor is associated with a much slower rate of cervical change in the active phase. It may be as slow as 0.5 cm/hr therefore, the duration of active phase of labor may be longer than previously thought. WHO guideline have stated that, the duration of active first stage (from 5 cm until full cervical dilatation) usually does not extend beyond 12 hours in first labors, and usually does not extend beyond 10 hours in subsequent pregnancies.

**Duration of Second Stage:** The duration of the second stage has also been extended, with no intervention till 3 hours in first labor and 2 hours for subsequent labors, provided maternal and fetal conditions are reassuring and cephalopelvic disproportion has been ruled out. We don't know enough about the association of long 2nd stage of labor with short and long term effect on baby

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and permanent maternal pelvic floor damage.

Some clinicians divide the second stage into a **passive phase** (from complete cervical dilation to onset of active maternal expulsive efforts) and an **active phase** (from beginning of active maternal expulsive efforts to expulsion of the fetus).

**Clinical Pelvimetry:** Routine clinical pelvimetry on admission to labor ward is not recommended, and only pelvic examination should be done. In case of suspicion of CPD or contracted pelvis due to height of the patient or size of the baby, clinical pelvimetry can be done. These recommendations are only for a low risk pregnancy.

**USG Assessment for Progress of Labor:** The dilatation of cervix and descent of head can be measured by transperineal USG without repeated invasive pelvic examination and discomfort to women. The learning curve for labor USG is low and Ultrasound examination is more objective and reproducible than digital vaginal examination.

**Fetal Well being Assessment:** Auscultation using a Doppler ultrasound device or Pinard fetal stethoscope is recommended for the assessment of fetal wellbeing, on labor admission and then monitoring can be done by intermittent auscultation. There is no role of admission CTG or continuous CTG in normal labor in low risk women.

**Pain Relief and Position:** Women should be allowed deliver in any position that she wants for labor and any kind of analgesia whenever she wishes. She should be encouraged to be ambulant and use upright position for labor.

**Antispasmodics:** The use of antispasmodic agents for prevention of delay in labor is not recommended.

**Method of Pushing:** Women in the expulsive phase of the second stage of labor should be encouraged and supported to follow their own urge to push. For women with epidural analgesia in the second stage of labor, delaying pushing for one to two hours after full dilatation or until the woman regains the sensory urge to bear down is recommended. This recommendation is in the context where resources are

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available for longer stay in second stage and perinatal hypoxia can be adequately assessed and managed.

**Episiotomy:** Routine or liberal use of episiotomy is not recommended for women undergoing spontaneous vaginal birth.

**Active Management of 3<sup>rd</sup> Stage:** Consists of prophylactic uterotonics, delayed cord clamping, controlled cord traction and uterine massage.

**Uterine Massage** Sustained fundal massage is no longer recommended during management of 3<sup>rd</sup> stage of labor.

**Neonatal Care:** In neonates born through clear amniotic fluid who start breathing on their own after birth, suctioning of the mouth and nose should not be performed and newborns without complications should be kept in skin-to-skin contact with their mothers during the first hour after birth to prevent hypothermia and promote breastfeeding.

**Respectful Maternity Care with Positive Pregnancy Outcome and Experience:** The most important change which has occurred is the strategy to provide women with a positive pregnancy experience along with good outcome. The women should be treated with respect and she should have full involvement in the decision making of any intervention. She should be provided complete information regarding all the aspects of labor. If she wishes, she should be allowed a companion of her choice.

## Suggested Reading

1. WHO recommendations: intrapartum care for a positive childbirth experience. <https://apps.who.int/iris/bitstream/handle/10665/260178/9789241550215-eng.pdf;jsessionid=0820C42F6B4D2F6105C55C869982FD62?sequence=1>.
2. Zhang J, Duan T. The physiologic pattern of normal labour progression. BJOG 2018;125(8):955.

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# Abnormal Labor: Definition and Management

**Archana Mishra<sup>1</sup>, Shubham Bidhuri<sup>2</sup>**

<sup>1</sup>Associate Professor, <sup>2</sup>Postgraduate Student, VMMC & Safdarjung Hospital

Normal labor is characterized by regular and painful uterine contractions that conclude in progressive labor. For all obstetricians determining whether “labor is progressing normally” is the most vital component of intrapartum care but till now determining the onset of labor, measuring its progress, and evaluating the factors (power, passenger, pelvis) that affect its course are an inexact science.

Before understanding abnormality of labour it is important to understand definitions of all three stages of labour and the realistic rate of dilatation of cervix.

## 3 P’s for Normal Progression of Labor

The normal progression of labor requires, *Power* from uterine contractions, *Passage* that is provided by adequate bony maternal pelvis, and *Passenger* presenting itself in a favorable presentation.

## Progress of Labour Revisited in 21<sup>st</sup> century

For nearly 6 decades obstetricians of the world were following the criteria established by Emanuel Friedman in 1950. These criteria were the backbone of Partograph’s alert and action lines with expected rate of cervical dilation at 1 cm per hour, starting at 3 to 4 cm of dilation. Progress of labor at this rate has proved unrealistic for most nulliparous women.

## Newer Defined Phases for Labor Progress

The first stage consists of a *latent phase* and an *active phase*

**Latent Phase:** The latent first stage is a period of time characterized by painful uterine contractions and variable changes of the cervix, including some

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degree of effacement and slower progression of dilatation up to 5 cm for first and subsequent labors. *Standard duration of the latent first stage has not been established and can vary widely from one woman to another.* The time to dilate 1 cm in latent phase (defined as dilation <6 cm) is significantly longer in women undergoing induction than in those in spontaneous labor and can take many hours.

**Active Phase:** Regular painful uterine contractions, a substantial degree of cervical effacement and more rapid cervical dilatation from 5 cm until full dilatation for first and subsequent labors.

*The duration of active first stage usually does not extend beyond **12 hours** in first labours, and usually does not extend beyond **10 hours** in subsequent labours.*

**Second Stage of Labor:** Time from complete cervical dilation to fetal expulsion is estimated to be 3 hours for primigravida and 2 hours for multigravida.

There is lack of consensus on duration of second stage in cases receiving epidural analgesia as involuntary urge to bear down is often delayed in these women. Similar is the case of malposition and Breech presentation where exact permissible duration has not been mentioned clearly.

**Third Stage of labour:** From the delivery of baby to expulsion of placenta has duration of 10 to 20 minutes. Prolong third stage that merits intervention for placenta retention is beyond 30 minutes.

## **First and Second-Stage Abnormalities**

**Protraction disorder:** Labor is progressing but is slower than normal. By convention, an abnormally long active phase is usually described as *protracted*, whereas an abnormally long latent phase or second stage is usually described as *prolonged*.

**Arrest Disorders:** Complete cessation in progress of labour.

Protraction or arrest of labor is the most common reason for primary caesarean delivery. In one study including over 700 women who had unplanned caesareans,

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68 percent of the caesarean deliveries were due to lack of progress in labor.

**Protracted Active Phase** is change in cervical dilatation in the active phase of less than 1.2 cm/hour for nulliparous women and less than 1.5 cm/hour for multiparous women .

**Active Phase Arrest** is diagnosed at cervical dilation  $\geq 6$  cm in a patient with ruptured membranes with No cervical change for  $\geq 4$  hours despite adequate contractions (usually defined as  $>200$  Montevideo units) Or No cervical change for  $\geq 6$  hours with inadequate contractions.

However, ACOG in its 'Consortium on Safe Labor data' highlighted that firstly from 4–6 cm, nulliparous and multiparous women dilated at essentially the same rate, and more slowly than historically described. Beyond 6 cm, multiparous women dilated more rapidly. Second, the maximal slope in the rate of change of cervical dilation over time (ie, the active phase) often did not start until at least 6 cm.

*Thus, for the diagnosis of active phase protraction or labor arrest, neither should be diagnosed before 6 cm of dilation.*

## **Risk Factors of Protraction of First Stage of Labour**

*Hypocontractile uterine activity:* Fewer than 3 or 4 contractions/10 minutes and/or of short duration,  $<50$  seconds. *Maternal obesity, Cephalopelvic disproportion and Neuraxial anesthesia*

## **Management of Abnormal First-Stage Labor**

### **Prolonged Latent Phase of First Stage of Labour**

- Most women with a prolonged latent phase ultimately will enter the active phase with expectant management.
- With few exceptions, the remainder either will cease contracting or, with amniotomy or oxytocin (or both), achieve the active phase.
- Thus, a prolonged latent phase (eg, greater than 20 hours in nulliparous women and greater than 14 hours in multiparous women) should not be an



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indication for caesarean delivery.

- Slow but progressive labor in the first stage of labor should not be an indication for caesarean delivery.

There is controversy over oxytocin administration and amniotomy in latent phase as WHO has not defined any upper limit of duration of latent first stage and prohibited use of oxytocin and amniotomy. Therapeutic rest is another approach which involves administration of parenteral analgesics or sedatives to relieve the patient's discomfort and allow for progression of labor while she rests or sleeps. Opioids are particularly useful in women who are tired, uncomfortable, and in early latent phase. In one review, approximately 85% of women treated with opioids woke up in the active phase of labor, 10% were not in labor (suggesting a diagnosis of false labor), and 5% had a persistent dysfunctional contraction pattern.

### **Protracted Active Phase of Labour**

**Oxytocin and Amniotomy:** For active phase protraction recommendation is administration of oxytocin and amniotomy (if not already ruptured), if there has been adequate fetal descent to a safe fetal station (eg, -2 or lower) for amniotomy. If the head is high and not well applied to the cervix, then oxytocin should be started and amniotomy should be performed 4-6 hours later. In case of persistent non descent cephalopelvic disproportion should be ruled out then controlled amniotomy can be performed.

If labor is progressing, either slowly or normally, oxytocin should be continued at the dose required to maintain an adequate uterine contraction pattern.

**Amniotomy** without oxytocin was not found to be effective to accelerate labour. Epidural analgesia should be considered for pain relief.

Ambulation may improve the comfort of the women undergoing labour and is not harmful, but there is no convincing evidence that this intervention prevents or treats protraction or arrest disorders.

**Caesarean Delivery** for active phase arrest in the first stage of labor should be reserved for women at or beyond 6 cm of dilation with ruptured membranes

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who fail to progress despite 4 hours of adequate uterine activity (>200 Montevideo units), or at least 6 hours of oxytocin administration with inadequate uterine activity and no cervical change.

The key issue is using appropriate criteria for diagnosing labor arrest. Some unnecessary caesareans will be performed if arrest is diagnosed too soon, and maternal & fetal complications are likely to increase if arrest is diagnosed too late. Early interventions for prevention of Arrest of active phase like amniotomy, epidural anaesthesia or misoprostol are not recommended.

## **Abnormal Second Stage of Labor**

Parity, delayed pushing, use of epidural analgesia, maternal body mass index, birth weight, occiput posterior position and fetal station at complete dilation, all have been shown to affect the length of the second stage of labor.

## **Management of Abnormal Second-Stage Labor**

Malposition or malpresentation, macrosomia, small maternal pelvis should be ruled out. After 60 to 90 minutes of pushing, oxytocin augmentation should be started if descent is minimal (ie, <1 cm) or absent and uterine contractions are less frequent than every 3 minutes.

*Management approaches may reduce caesarean deliveries in the second stage of labor*

In addition to expectant management of the second stage, two other practices that could potentially reduce caesarean deliveries in the second stage are *operative vaginal delivery* and *manual rotation of the fetal occiput* for malposition.

*Operative vaginal delivery* in the second stage of labor by experienced and well trained physicians should be considered a safe, acceptable alternative to cesarean delivery. Avoid operative vaginal delivery (vacuum and forceps) and caesarean in the second stage as long as the fetus continues to descend and/or rotate to a more favorable position for vaginal delivery and the fetal heart rate pattern is not concerning. Prompt operative

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intervention is indicated for fetuses with category III fetal heart rate tracings, regardless of labor progress.

*Manual rotation of the fetal occiput* in the setting of fetal malposition in the second stage of labor is a reasonable intervention to consider before moving to operative vaginal delivery or caesarean delivery.

There is no strong evidence that a change in maternal position (eg, upright posture, lateral, or hands and knees position instead of supine) is useful for treatment of a prolonged second stage. Women should be encouraged to labor and give birth in the position they find most comfortable.

Manual fundal pressure does not significantly shorten the duration of the second stage and may be potentially harmful.

## **Effects of abnormal labour on Fetomaternal Outcome**

*Adverse Maternal Outcome are-* Operative vaginal delivery, Third-/fourth-degree perineal lacerations, Caesarean delivery, Urinary retention, Postpartum haemorrhage and Chorioamnionitis.

*Adverse Fetal Outcome are-* In a protracted first stage of labor there is no increase in serious neonatal morbidity or mortality or increased risks for admission to the neonatal intensive care unit and Five-minute Apgar score <7.

Prolonged second stage of labour is associated with absolute increase in Neonatal seizures, hypoxic-ischemic encephalopathy, sepsis, and Neonatal Mortality.

## **Summary**

During labor complications, caesarean deliveries can be a life-saving procedure and may become medically necessary. The best management of labor requires a coordinated interprofessional effort between trained obstetric nurses, midwives, and providers. Team management may lower the average caesarean section rates and improve outcomes.

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## Suggested Reading

1. WHO recommendations: intrapartum care for a positive childbirth experience. <https://apps.who.int/iris/bitstream/handle/10665/260178/9789241550215-eng.pdf; jsessionid = 631658A9453AF7EBD53A1DA26244D79A? sequence=1>. (Last accessed on 10 September 2019)
2. Approaches to Limit Intervention During Labor and Birth, ACOG committee opinion Number 766. <https://www.acog.org/Clinical-Guidance-and-Publications/Committee-Opinions/Committee-on-Obstetric-Practice/Approaches-to-Limit-Intervention-During-Labor-and-Birth?IsMobileSet=false> (last accessed on 10 September 2019)

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# Operative Vaginal Delivery: Reviving the lost art

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Operative vaginal delivery (OVD) is a delivery in which the operator uses ventouse (vacuum), forceps or other devices to extract the fetus from vagina. The aim is to mimic spontaneous vaginal birth thereby expediting delivery without undue maternal or neonatal morbidity. It accounts for around 3% of all deliveries. The instrument most appropriate to the clinical circumstances should be chosen by the operator, guided by their level of skill. In general, forceps has higher success rate compared to ventouse but causes more perineal trauma. It's important to counsel the mother before application of the instrument. It is a good practice to review the history, perform a complete abdominal and vaginal examination prior to application of instrument. More than the technique itself, it's important to wisely choose, or rule out, a candidate for instrumental delivery.

## Indications and Contraindications

The various *indications* for OVD are; (i) suspected or anticipated fetal distress, (ii) maternal medical conditions where maternal effort is contraindicated to "cut down the second stage of labour/prophylactic forceps" e.g. severe hypertension or cardiac failure, risk of aortic dissection, proliferative retinopathy, cerebral aneurysm, myasthenia gravis, spinal cord injury, cerebral vascular disease, (iii) prolonged second stage of labor, (iv) maternal fatigue or exhaustion. Similarly, OVD must be avoided in the following (*contraindications*); (i) suspected fetopelvic disproportion is a contraindication to any instrumental vaginal delivery, (ii) any contraindication to vaginal delivery, (iii) known fetal demineralization diseases like osteogenesis imperfecta, maternal Ehlers-Danlos syndrome and fetal bleeding diatheses. Additionally, vacuum

extraction is avoided in gestation <34 weeks and cases in which prior scalp sampling or multiple attempts at fetal scalp electrode placement have been made as the scalp trauma from these procedures may increase the risk of cephalohematoma or external bleeding from the scalp wound.

## Classification

	Outlet	Low Cavity	Mid Cavity
Station	Scalp visible at introitus without separating labia, skull reached pelvic floor, head at or on perineum	≥ +2 station and not on pelvic floor	between 0 and +2 cm
Sagittal suture	in AP diameter or oblique diameter, Rotation <45 degrees	Rotation ≤45 degrees or ≥45 degrees	

**High forceps:** Not included in classification. Classification for Vacuum same as forceps except vacuum is used for traction and not rotation.

## Prerequisites for Instrumental Delivery

An experienced operator, empty bladder, patient consent, fully dilated cervix, engaged head, adequate contractions, ruptured membranes, vertex presentation (forceps can be applied in face presentation- mentoanterior) and outlet forceps require sagittal suture to be in AP diameter or rotation <45 degrees, if in oblique. No antibiotic prophylaxis is required. Needless to say, OVD should be attempted at an institute with the facility for emergency caesarean section, in case of failure of instrument.

## Preparation for Instrumental Delivery

One must take *written informed consent* wherever possible, although a verbal consent is acceptable in labor ward. In cases of trial of instrumental delivery in operation theatre, a written consent

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is a must. One must **anticipate** the complications and be prepared for shoulder dystocia and keep the PPH (post-partum haemorrhage) trolley ready. It is important to ensure that a *senior pediatrician* who is trained in neonatal resuscitation is present during the delivery. The *availability of operation theatre* in case of failure must be ensured. The woman is placed in dorsal/lithotomy, bladder emptied, adequate contractions checked and the appropriate instrument is chosen and the provision for close fetal heart rate monitoring made.

## **Vacuum Delivery**

The effective analgesia is pudendal or perineal infiltration. The appropriate size of cup is chosen as per the size of fetal head. Vacuum cup is applied with center at or behind the flexion point over the sagittal suture. The flexion point is 3 cm in front of the posterior fontanelle. Vacuum cup position and application is checked. One must ensure that no part of cervix or vaginal wall is trapped beneath the rim of the cup by swiping a finger across cup circumference before and after vacuum creation as well as prior to traction. Vacuum is created by increasing the negative pressure to 0.8 kg/cm<sup>2</sup> (600 mm Hg). Chignon is formed after 1-2 minutes. Rapid application of negative pressure over 1-2 min is recommended. Handle of the cup is held in the dominant hand and gentle intermittent traction is given with maternal expulsive efforts. Traction is initially directed downwards and then progressively upwards as head emerges. During pulls, non dominant hand should be placed inside vagina, with thumb on the cup and fingers on the scalp which helps in both judging descent with traction and can detect if cup is separating. Procedure is to be abandoned if cup detaches  $\geq 3$  times or other indications for abandonment of instrumental delivery are present. Episiotomy performed during the crowning of the head if indicated. Once the head is delivered, the suction of the cup is released and instrument removed and delivery is completed as normal.

**Soft versus Rigid Cups:** There is no difference in the maternal injury rate with soft or rigid instrument. Rigid cups tended

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to be more suitable for occiput posterior, occiput transverse, and difficult occiput anterior position deliveries given their ability to stay attached despite strong traction, while soft cups appeared to be more appropriate for uncomplicated occiput anterior extractions where less traction is needed and thus the excess risk of scalp injury could be avoided. Most failures are due to cup detachment.

**Bell versus Mushroom Shape:**

Theoretically, bell-shaped cups tend to draw the chignon into the cup, thereby reducing the available vacuum area and leading to a decrease in cup adhesiveness at the edges. This allows leakage of air and eventual detachments. M-style cups, have a mushroom-shaped design which tends to draw the chignon into the cup while the edges interlock with the base of the chignon, thereby creating a mechanical attachment that compensate for the loss of available vacuum space.

**Occiput Posterior Position:** The flexion point on occiput posterior presentations is posterior and higher in the vagina than with occiput anterior presentations. Vacuum device with a discoid, rather than a bell-shaped, cup and a nonfixed traction cord rather than a firm stem is required. Kiwi OmniCup vacuum extraction device is more appropriate for occiput posterior position.

## **Forceps Delivery**

Regional or pudendal block with perineal infiltration are adequate forms of analgesia for low and outlet deliveries. A regional block (epidural or spinal) is usually required for a mid-rotational delivery. An appropriate instrument is selected according to the station and rotation of the fetal head. Phantom application of forceps is done i.e. lock the blades outside and identify left and right blade as per maternal left and right. The left blade is first inserted into the left side of vagina while guarding the vaginal tissue with other hand followed by insertion of the right blade with right hand. Note the time of forceps application. Blades are assessed to ensure correct application and then locked together when positioned correctly. *In occipitoanterior, correct application is when posterior fontanelle is 1cm above the*



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*plane of the shanks, sagittal suture lies in the midline of the shanks / perpendicular to the plane of the shanks.* Application is correct if the operator cannot place more than a fingertip between the fenestration of the blade and the fetal head on either side. Traction is applied during a contraction with maternal bearing down efforts following the pelvic curve. The dominant hand gives outward pull while the other hand gives continuous downward pressure. In between contractions the blades should be unlocked. An episiotomy is performed with crowning of the head if indicated. After horizontal traction, when occiput is delivered, handles are gradually elevated, delivering head by extension. Blades are removed in opposite order of application. Time of forceps removal is noted. Rest of delivery is completed as normal. Mid cavity procedures and rotational deliveries require expertise and should be performed only by an experienced/senior operator.

**Sequential Instrumentation-** Recently it has been reported that sequential instrument only increases neonatal and maternal morbidity and one should proceed for caesarean delivery in case of failure of instrumental delivery, whether ventouse or forceps. *The indications for abandonment of instrumental vaginal delivery are difficulty in applying the instrument, no progressive descent with each pull, no evidence of imminent birth following three pulls of a correctly placed instrument by an experienced operator or birth not imminent within 15-20 minutes.* Abandon the procedure if any of above is present, no sequential instrumentation should be tried and proceed for a caesarean delivery.

After delivery, the pediatrician is to be informed about the instrumental delivery, explore the vagina for any lacerations, trauma to the cervix, rectum/anal sphincter and perform timely repair. Document the procedure in patient's records, clearly stating the indication and complications if any. Provide bladder care, analgesia and measures to reduce pain and swelling in post-partum period. Prior to hospital discharge counsel the woman about prognosis for future births.

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**Trial of operative vaginal delivery** should only be attempted if obstetrician feels that the chances of success are high, but must be prepared to abandon the attempt if appropriate descent does not occur. There is no consensus on the number of forceps pulls or vacuum detachments that should be allowed before abandoning the procedure. However, descent of head should be expected with traction and if there is no descent with the first several pulls, reevaluation is necessary.

## References

1. Obstetrics Practice Bulletin No. 154: Operative Vaginal Delivery. November 2015 (Replaces Bulletin No. 17, June 2000). American College of Obstetricians and 4. Gynecologists. *Obstet Gynecol.* 2015;126:e56-65.
2. RCOG Greentop Guideline No 26 'Operative vaginal Delivery' Jan 2011 .
3. Clinical guidelines South Australian Perinatal practice Guidelines- Operative vaginal Deliveries, Nov 2013.
4. American College of Obstetricians and Gynecologists: Operative vaginal Delivery.. Practice Bulletin No 17. June 2000. Reaffirmed 2012.
5. Wegner, E. and Bernstein, I. (2019). *UpToDate*. [online] Uptodate.com. Available at: [https://www.uptodate.com/contents/operative-vaginal-delivery?topicRef=5396&source=see\\_link](https://www.uptodate.com/contents/operative-vaginal-delivery?topicRef=5396&source=see_link) [Accessed 14 Sep. 2019].

Childbirth is more admirable than conquest, more amazing than self-defense and as courageous as either one. —**Gloria Steinem**

## **Events Held under aegis of NARCHI Delhi Branch**

1. A cervical cancer screening and awareness camp was organized in SDMC school Kishan Garh on 16<sup>th</sup> May with the help of Rotary club Delhi Ridge, Rotary club Vasant Vally and Rajiv Gandhi cancer Hospital.
2. On the occasion of "World Menstrual Hygiene and Health day", Dr Shivani Aggarwal conducted a public awareness program and CME on menstrual health and hygiene on 29<sup>th</sup> May, 2019 at Kasturba Hospital.
3. A CME on Prevention of PTL was organized by Dr Anita Sabharwal under aegis of NARCHI Delhi on 25<sup>th</sup> May. Dr Sonia Naik discussed "Role of oral NMP" and Dr. J. B. Sharma elaborated on "New approach in treatment of Vulvovaginal Candidiasis".
4. On 6<sup>th</sup> June, VMMC and Safdarjung Hospital organized a CME on "Baby born too soon too small: How to manage". Controversies and current evidence on management of FGR and Preterm Labour was discussed.
5. An "Anaemia Awareness" camp was arranged by Dr Anita Rajhoria, at Sardar Vallabh Bhai Patel Hospital on 25<sup>th</sup> June, 2019.
6. A CME with discussions on Recurrent Pregnancy Loss, Breast cancer screening along with a Panel on male infertility was put together by Dr Susheela Gupta, on 26<sup>th</sup> June, 2019.
7. A CME on "tuberculosis and fertility" was organized under aegis NARCHI on 3<sup>rd</sup> July by Dr Shivani Aggarwal at Kasturba Hospital, Delhi.
8. World Population day was celebrated on 23<sup>rd</sup> July, 2019 under aegis of NARCHI, a camp

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was organized by Dr Sucheta Bharti at Maharaja Agrasen Polyclinic, Uttam Nagar, New Delhi.

9. A CME on “management of hyperpigmentation in pregnancy and scar postpartum” was conducted under aegis of NARCHI at Kasturba hospital on 31<sup>st</sup> July, 2019.
10. A workshop on breastfeeding was conducted in collaboration with Gracia Raina Foundation in Safdarjung hospital on 6<sup>th</sup> August. The advantages of breastfeeding were elaborated to the postpartum females in great detail.
11. The Breast-feeding week was observed at Kasturba Hospital, Delhi on 7<sup>th</sup> August. It was marked by display of banners, public awareness lectures and CME on Breast Feeding Practices and management of Rh-negative pregnancy.
12. Outreach Committee at Sardar Vallabh Bhai Patel Hospital, New Delhi led by Dr Anita Rajhoria organized a programme for health care providers and general public on World Organ Donation Day, 13<sup>th</sup> August, 2019. The people were made aware regarding importance of organ donation on this day.
13. A cervical cancer awareness talk was organized under aegis of NARCHI for the women in urban slum organized by Vaisya charitable trust in their Jaunapur education center on 29<sup>th</sup> August, 2019. The cancer awareness talk was given by Dr Kusum Chopra of Rotary club Delhi Ridge.
14. A CME on Advances in parenteral iron therapy for anaemia in obstetric patients was conducted on 5<sup>th</sup> September, at Kasturba Hospital under aegis of NARCHI.

The talk was given by Dr Shivani Aggarwal.

15. A CME was organized by FOGsd (Forum of Obstetricians and Gynecologists of south Delhi) under aegis of NARCHI Delhi on 5<sup>th</sup> September, 2019. Dr Vijay Zutshi, Dr Leena Dadhwal and Dr Rupinder Sekhon delivered excellent talks on "Strategies to prevent cervical cancer, Approach to breast lump and Management of adnexal masses" at Magnolia Hall, India Habitat Center. This was followed by Teachers day celebrations and felicitations.



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Maternal & Perinatal Health

OPPORTUNITY TO  
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The poster features a central graphic of an iceberg with a colorful, abstract pattern on its tip. Logos for NARCHI Delhi and ICMCH are visible in the top right corner. A red banner at the bottom contains the event details and website.

## Events held under aegis of NARCHI



Public Awareness Program  
and CME conducted by Dr Shivani Aggarwal



Public Awareness Program  
and CME conducted by Dr Shivani Aggarwal



CME on Prevention of PTL



CME on Prevention of PTL



CME on "Baby Born Too Soon Too Small:  
How to manage" at VMMC & SJH



CME on "Baby Born Too Soon Too Small:  
How to manage" at VMMC & SJH



Anaemia Awareness Camp Arranged by Dr Anita Rajhoria



Anaemia Awareness Camp Arranged by Dr Anita Rajhoria



CME Organized by Dr Susheela Gupta



CME Organized by Dr Susheela Gupta



CME on "Tuberculosis and Fertility" was Organized by Dr Shivani Aggarwal at Kasturba Hospital



CME on "Tuberculosis and Fertility" was Organized by Dr Shivani Aggarwal at Kasturba Hospital



World Population Day Celebration, Camp Organized by Dr Sucheta Bharti at Maharaja Agrasen Polyclinic, Uttam Nagar



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World Population Day Celebration, Camp Organized by Dr Sucheta Bharti at Maharaja Agrasen Polyclinic, Uttam Nagar



World Population Day Celebration





A CME on "Management of Hyperpigmentation in Pregnancy and Scar Postpartum" by Dr Shivani Aggarwal



A CME on "Management of Hyperpigmentation in Pregnancy and Scar Postpartum" by Dr Shivani Aggarwal



The Cancer Awareness talk by Dr Kusum Chopra of Rotary Club Delhi Ridge



The Cancer Awareness talk by Dr Kusum Chopra of Rotary Club Delhi Ridge



A Workshop on Breastfeeding  
at Safdarjung Hospital, in Collaboration  
with Gracia Raina Foundation



A Workshop on Breastfeeding at Safdarjung Hospital



CME on Advances in Parenteral Iron Therapy  
by Dr Shivani Aggarwal



CME on Advances in Parenteral Iron Therapy  
by Dr Shivani Aggarwal



CME Organised by FOGSD  
at Magnolia Hall India Habitat Center



CME Organised by FOGsd  
at Magnolia Hall India Habitat Center



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at Magnolia Hall India Habitat Center



Multidisciplinary Camp in Collaboration  
with Madhok Foundation and RCD Ridge



Multidisciplinary Camp in Collaboration  
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**26<sup>th</sup> Annual Conference**

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23<sup>rd</sup> - 24<sup>th</sup> November, 2019

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Postpartum Period :The Crucial Six Weeks

**Organised by**  
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VMMC & Safdarjung Hospital, New Delhi

**Venue:** ABVIMS & Dr Ram Manohar Lohia Hospital New Delhi

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- 2) PPH (Railway Hospital, New Delhi)

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New Delhi

**Theme**  
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**Venue:** ABVIMS & Dr Ram Manohar Lohia Hospital New Delhi

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Please tick the appropriate checkbox (All the above fields are mandatory)

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(Please Select Any One)

Basic Infertility  
Venue: Gangaram Hospital, Auditorium, New Delhi

**OR**

PPH  
Venue: Northern Railway Hospital, New Delhi

**Free Workshops - 21 Nov**

Suture & Knotting (2:00 pm - 1:00 pm)

Menstrual Hygiene (2:00 pm - 4:00 pm)

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26<sup>th</sup> Annual Conference  
**NARCHI DELHI**  
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Organised by: NARCHI DELHI  
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Venue:  
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Instructions:

1. A structured abstract not more than 250 words, including aims and objectives, materials & methods, results, and conclusion.
2. Typed in Times New Roman, single space with the title font size 12, author font size 11 and text font size 10.
3. Presenting author should be a NARCHI member and registered for the conference.
4. Presenting author can present only one paper or one poster. Competition papers are invited from NARCHI members.

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# Cardiotocograph: Definition and Description

Compiled by Megha Mittal<sup>1</sup>, Suchandana Das Gupta<sup>2</sup>

<sup>1</sup>Senior Resident, <sup>2</sup>Postgraduate Student, VMMC & Safdarjung Hospital

## NICHD Definitions of FHR Characteristics and Patterns

### Variability

Fluctuations in baseline that are irregular in amplitude and frequency

Absent= amplitude undetectable;  
 Minimal= amplitude 0 to 5 bpm;  
 Moderate= amplitude 6 to 25 bpm;  
 Marked= amplitude over 25 bpm.

Measured in a 10-minute window. The amplitude is measured peak to trough. There is no distinction between short-term and long-term variability.

### Baseline Rate

Bradycardia= below 110 bpm; Normal= 110 to 160 bpm; Tachycardia= over 160 bpm;

The baseline rate is the mean bpm (rounded to 0 or 5) over a 10-minute interval, excluding periodic changes, periods of marked variability, and segments that differ by more than 25 bpm. The baseline must be identifiable for two minutes during the interval (but not

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necessarily a contiguous two minutes); otherwise, it is considered indeterminate.

### **Acceleration**

An abrupt\* increase in the FHR. Before 32 weeks of gestation, accelerations should last  $\geq 10$  sec and peak  $\geq 10$  bpm above baseline. As of 32 weeks gestation, accelerations should last  $\geq 15$  sec and peak  $\geq 15$  bpm above baseline.

A prolonged acceleration is  $\geq 2$  minutes but less than 10 minutes. An acceleration of 10 minutes or more is considered a change in baseline.

### **Late Deceleration**

A gradual\* decrease and return to baseline of the FHR associated with a uterine contraction. The deceleration is delayed in timing, with the nadir of the deceleration occurring after the peak of the contraction. The onset, nadir, and recovery usually occur after the onset, peak, and termination of a contraction.

### **Early Deceleration**

A gradual\* decrease and return to baseline of the FHR associated with a uterine contraction. The nadir of the FHR and the peak of the contraction occur at the same time. The deceleration's onset, nadir, and termination are usually coincident with the onset, peak, and termination of the contraction.

### **Variable Deceleration**

An abrupt\* decrease in FHR below the baseline. The decrease is  $\geq 15$  bpm, lasting  $\geq 15$  secs and  $< 2$  minutes from onset to return to baseline. The onset, depth, and duration of variable decelerations commonly vary with successive uterine contractions.

### **Prolonged Deceleration**

A decrease in FHR below the baseline of 15 bpm or more, lasting at least 2 minutes but  $< 10$  minutes from onset to return to baseline. A prolonged deceleration of 10 minutes or more is considered a change in baseline.

\* "Gradual" and "abrupt" changes are defined as taking  $\geq 30$  seconds or  $< 30$  seconds, respectively, from the onset of the deceleration/acceleration to its nadir/peak

# NICHD Criteria for Category I, II, and III FHR Tracings

## Category I

All of the following criteria must be present. Tracings meeting these criteria are predictive of normal fetal acid-base balance at the time of observation.

Baseline rate: 110 to 160 bpm

Moderate baseline FHR variability

No late or variable decelerations

Early decelerations may be present or absent

Accelerations may be present or absent

## Category III

Include either (1) or (2) below

1. Absent baseline FHR variability and any of the following:
  - Recurrent late decelerations
  - Recurrent variable decelerations
  - Bradycardia
2. Sinusoidal pattern

## Category II

FHR tracing does not meet criteria for either category I or III and is considered indeterminate.

**Table 2:** Description of cardiocotocograph trace features (NICE 2017).

Description	Feature		
	Baseline (beats/minute)	Baseline variability (beats/minute)	Decelerations
<b>Reassuring</b>	110 to 160	5 to 25	None or early Variable decelerations with no concerning characteristics* for less than 90 minutes
<b>Non-reassuring</b>	100 to 109 <sup>+</sup> OR 161 to 180	Less than 5 for 30 to 50 minutes OR More than 25 for 15 to 25 minutes	Variable decelerations with no concerning characteristics* for 90 minutes or more OR Variable decelerations with any concerning characteristics* in up to 50% of contractions for 30 minutes or more OR Variable decelerations with any concerning characteristics* in over 50% of contractions for less than 30 minutes OR Late decelerations in over 50% of contractions for less than 30 minutes, with no maternal or fetal clinical risk factors such as vaginal bleeding or significant meconium

<b>Abnormal</b>	Below 100 OR Above 180	Less than 5 for more than 50 minutes OR More than 25 for more than 25 minutes OR Sinusoidal	Variable decelerations with any concerning characteristics* in over 50% of contractions for 30 minutes (or less if any maternal or fetal clinical risk factors [see above]) OR Late decelerations for 30 minutes (or less if any maternal or fetal clinical risk factors) OR Acute bradycardia, or a single prolonged deceleration lasting 3 minutes or more
<p>*concerning characteristics of variable decelerations: lasting more than 60 seconds; reduced baseline variability within the deceleration; failure to return to baseline; biphasic (W) shape; no shouldering.  † continue usual care if there is normal baseline variability and no variable or late decelerations.</p>			

“When a human being is born the first thing he does is crying.. The rest of his life he'll spend discovering why...” —  
**Erik Tanghe**



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# Intrapartum Fetal Monitoring and CTG Interpretation

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## Introduction

Fetal Heart rate assessment is by far the most commonly available objective tool for understanding of fetal well being in labor. The fetal heart rate (FHR) pattern is an indirect marker of fetal cardiac and central nervous system responses to changes in blood pressure, blood gases, and acid-base status. The rationale for intrapartum FHR monitoring is that identification of FHR changes potentially associated with inadequate fetal oxygenation may enable timely intervention to reduce the likelihood of hypoxic injury or death. Although virtually all obstetric societies advise monitoring the FHR during labor, the benefit of this intervention has not been clearly demonstrated and this recommendation is largely based upon expert opinion and medicolegal precedent.

## Physiological Control of the FHR

The physiological control of the FHR is regulated by intrinsic pacemaker of the heart and extrinsic and humoral factors. Other than hypoxia, FHR can be affected by fetal behavioral states, fetal arrhythmia and maternal factors like increase in temperature, drugs, external stimuli etc. Also physiological adaptations of fetus in labor can alter the FHR and a *fetus in stress is not necessarily distressed in labor*. At the peak of a uterine contraction no oxygenated maternal blood enters the intervillous sinuses, reducing maternal-fetal oxygen transfer and producing a period of relative fetal hypoxia. Most healthy babies can compensate very well for this transient hypoxia.

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## **Triaging Mothers for Fetal Monitoring in Labor at Admission**

Fetal well being in late antenatal period or early intrapartum period is the first step to understand the type of ongoing intrapartum monitoring required. However labor is dynamic and monitoring methods may need to be changed with progressive labor events. Maternal respiration, maternal circulation, placental perfusion, placental gas exchange, umbilical and fetal circulation, all play a role in fetal well being. A fetus which is already compromised in the antenatal period has a high chance of decompensating in labor.

### **Criteria for Classifying Mothers as Low Risk**

*Antepartum factors*- Absence of serious previous maternal health conditions like diabetes or pre-eclampsia; No antenatal vaginal hemorrhage; Normal fetal growth, amniotic fluid, and Doppler parameters; No uterine scar; Normal fetal movements; Singleton, term, cephalic presentation; absence of rupture of membranes lasting > 24 hours.

*Intrapartum factors*- Normal frequency of contractions; No labor induction or augmentation; No epidural analgesia; No abnormal vaginal hemorrhage; No fresh or thick meconium; No maternal temperature >38°C; Active first stage lasting <12 hours; Second stage lasting <1 hour; Clearly audible fetal heart rate sounds in normal range.

All mothers who are classified as low risk and fall into the above paradigm should have an intermittent auscultation. The use of continuous intrapartum monitoring in this group does not improve neonatal outcome but is associated with higher rates of medical intervention and restricts mobility of the mother. Fetal monitoring in low risk mothers (All settings) → Intermittent auscultation (IA) and in high resource settings → Admission test followed by IA in low risk mothers.

Intermittent auscultation involves hearing the FHR with a pinard stethoscope or hand held Doppler as a single rate for 1 minute immediately after the contraction

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is over every 15 minutes in first stage of labor. Maternal heart rate has to be documented separately. The admission CTG is a short, usually a 20 minute, recording of the FHR immediately after admission to the labor ward. Acceleration noted with fetal movement or fetal scalp stimulation will further demonstrate a non hypoxic fetus.

Intermittent auscultation should ideally be accompanied by 1:1 care by a trained nurse or a midwife. Baseline rate, rising baseline rate, presence of accelerations and decelerations can be correctly identified by IA by trained personnel. Variability and chronic hypoxia cannot be determined by IA. If any abnormal findings are noted on IA as shown in Table 1, continuous CTG should be commenced.

**Table 1:** Abnormal findings on intermittent auscultation warranting continuous CTG monitoring.

	<b>Abnormal finding</b>
Baseline FHR	Below 110 bpm or above 160 bpm
Decelerations	Presence of repetitive or prolonged (>3 minutes) decelerations
Contractions	More than five contractions in a 10 minute period

Apart from a clinical assessment an admission test is recommended for high risk mothers. The main justification for admission CTG is that the uterine contractions during labor decrease the placental circulation; an abnormal tracing indicates a deficiency and hence identifies fetal compromise at an early stage to allow intervention.

## **Criteria for Classifying Mothers as High Risk**

### **Maternal Assessment**

- Pulse over 120 beats/minutes on 2 occasions 20 minutes apart.
- Single reading of either raised diastolic blood pressure of 110 mmHg or more or raised systolic blood pressure of 160 mmHg or more.
- Either raised diastolic blood pressure of 90 mmHg or more or raised systolic blood pressure of 140 mmHg or more on 2 consecutive readings taken 30 minutes apart.

- 
- A reading of 2+ of protein on urinalysis and a single reading of either raised diastolic blood pressure (90 mmHg or more) or raised systolic blood pressure (140 mmHg or more).
  - Temperature of 38°C or above on a single reading, or 37.5°C on 2 consecutive readings 1 hour apart.
  - Any vaginal blood loss other than a show.
  - Rupture of membranes more than 24 hours before the onset of established labor.
  - Presence of significant meconium.
  - Pain reported by the woman that differs from the pain normally associated with contractions.
  - Any risk factors recorded in the woman's notes that indicate the need for obstetrician led care.
  - Confirmed delay in the first or second stage of labor.
  - Request by the woman for additional pain relief involving regional anaesthesia.
  - Obstetric emergency, including antepartum haemorrhage, cord prolapse, postpartum haemorrhage, maternal seizure or collapse, or a need for advanced neonatal resuscitation.

### **Baby's Assessment**

- Any abnormal presentation including cord presentation.
- Reduced fetal movements in the last 24 hours reported by the mother.
- Deceleration heard in the fetal heart rate on intermittent auscultation.
- Suspected fetal growth restriction or macrosomia
- Suspected anhydramnios or polyhydramnios.
- Fetal heart rate below 110 or above 160 beats/minutes

### **Continuous FHR Monitoring (CTG) in High Risk Mothers (High Resource Settings)**

Continuous fetal monitoring except short interval of 15 minutes for attending to mother's personal needs by CTG is recommended for high risk mothers (NICE Guidelines 2017). However, CTG interpretation by itself has a poor

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predictive value for intrapartum hypoxia and a high false positive rate. Only about 40 to 60% of fetuses classified as abnormal by NICE guidelines have evidence of metabolic acidosis at birth. A Cochrane review in 2013 showed no significant difference in perinatal mortality rate but showed a significant increase in operative deliveries. Therefore, training doctors and nurses about fetal pathophysiology in the context of changing CTG patterns as labor unfolds with the overall clinical picture in mind is paramount.

## **FHR Monitoring in High Risk Labors in Low Resource Settings**

Despite the recommendations we all know it is impossible to do continuous CTG in all high risk mothers in low resource settings. In the DELPHI consensus statements concluded recently, 71 experts completed all three rounds (28 midwives, 43 obstetricians). Consensus was reached on (1) need for an admission test, (2) handheld Doppler for intrapartum fetal monitoring, (3) intermittent auscultation (IA) every 30 minutes for low-risk pregnancies during the first stage of labor and after every contraction for high-risk pregnancies in the second stage, (4) contraction monitoring hourly for low-risk pregnancies in the first stage. Consensus was not reached on frequency of IA or contraction monitoring for high-risk women in the first stage or low-risk women in the second stage of labor.

There is a gap between international recommendations and what is physically possible in many labor wards in low-resource settings. Research on how to effectively implement the consensus on fetal assessment at admission and use of handheld Doppler during labor and delivery is crucial to support staff in achieving the best possible care in low-resource settings.

## **Optimum Use of CTG and Adjunctive Tests**

It is important that doctors and nurses employ the principle of physiological response to intrapartum hypoxic stress prior to taking action after classifying the CTG as suspicious or abnormal. Even if the

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CTG is classified as abnormal, presence of a stable baseline and good variability may warrant no immediate operative intervention.

Conversely with a baby with reassuring CTG one may need to have a low threshold of CS in presence of high grade maternal fever, thick meconium and delayed progress of labor. Ongoing clinical chorioamnionitis may result in neurologic injury secondary to meconium aspiration syndrome and inflammatory brain damage even if trace is not pathological.

*Scalp stimulation* is a very useful and the most commonly used adjunctive test to CTG. Fetal scalp stimulation can be used to induce accelerations in the case of any non-reassuring or pathological CTG when clinical picture does not support fetal acidosis. There is about a 50% chance of acidosis in the fetus who fails to respond to stimulation in the presence of a non-reassuring pattern on CTG. If there is acceleration on scalp stimulation the chance of acidosis is less than 10%.

## **Management of Atypical CTG**

Assess the mother not the CTG alone: rule out acute irreversible events (like Cord prolapse, Rupture, Abruptio), find out *how far is she from delivery?* Start intrauterine resuscitation (Stop oxytocin, give oxygen, turn patient to left lateral position, give I/V fluids etc.) Do fetal scalp stimulation, take second opinion and if you decide to wait, *explain to woman and attendant and document.*

## **Perils of CTG**

The following case illustrates how we can optimize CTG use and reduce unnecessary operative intervention.

A 31 year old primigravida mother at 37 weeks 6 days period of gestation reported in labor room at 12.30am with labor pains. On per vaginal examination, cervix was 2cm dilated, 50% effaced with vertex at -3 station. On admission CTG was done as shown in **Fig A**, Admission test was not indicated in this case as per guidelines as she is low risk and seems to be in latent labor, however impression is reassuring. **Fig B**, CTG was repeated after 1 hour. This CTG is showing low variability but this is not worrying as this trace is

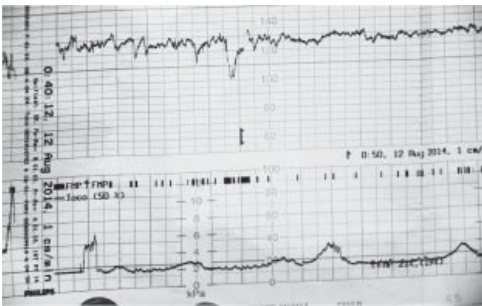
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only for 10 minutes and the prior CTG one hour back was reassuring, also the mother had adequate fetal movements at admission. This mother does not need a continuous CTG as per guidelines and situation should be reassessed if a sleeping trace continues for more than 30 minutes. **Fig C**, Between 2.30 am and 2.40 am there was a variable deceleration lasting for a minute. This is typically an isolated variable deceleration with no relation with contraction. Although it falls for more than 60 beats and lasts for more than 60 seconds it is not recurrent and is associated with variability but CTG before and after deceleration is reassuring, therefore no intervention is required. Only position change of mother can be advocated as this could be due to cord compression. **Fig D & E**, 2 CTG strips spread over an hour show the cyclicity of fetal behavior. The baby can be seen in 3 behavioral states: Deep sleep, Active sleep and Active wakefulness. It is about 10 hours since admission **Fig F** shows deceleration that could also be a loss of contact. Isolated findings like this with no change in clinical picture could be due to maternal position change. **Fig G**, It has been only 10 minutes since the last trace and there is a 6 minute area of ?Loss of contact? Prolonged deceleration? recording of maternal heart rate. Retrospectively speaking since the CTG became reassuring again there is a high chance of the maternal heart rate being picked up in between FHR tracing. **Fig H**, Another hour has passed and the CTG is reassuring again. **Fig I**, Again the CTG is patchy and indeterminable, some relevant observations required: Did mother change position? Was a per vaginal examination done? Was maternal heart rate being monitored? Is it a cord compression? Cord acidosis should be ruled out in these cases. **Fig J**, A fresh eye approach and an ultrasound revealed that the mother had a full bladder and the CTG machine was intermittently picking up the maternal heart rate CTG machine was changed and the mother catheterized. Beware !!!! of artefacts (particularly during 2<sup>nd</sup> stage). **Fig K**, shows maternal heart tracing. **Fig L**, The new CTG machine recorded a perfectly reassuring CTG. **Fig M**, Mother progressed in labor and had a good baseline and typical variable

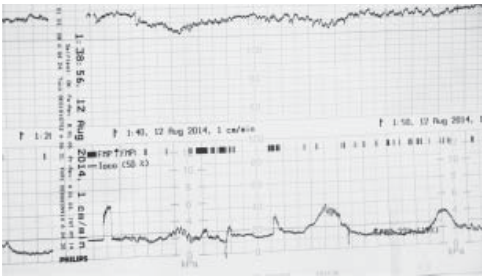
decelerations in late first stage. **Fig N**, Mother fully dilated with? accelerations during pushing? maternal heart rate.

Patient delivered approximately 3 hours after the appearance of the abnormal CTG. Baby had a good apgar and no metabolic acidosis.

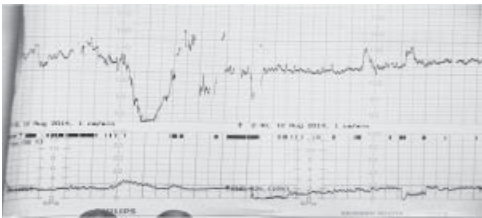
**Conclusion:** This case re-emphasizes the need to correlate an abnormal CTG in the entire context and also clearly shows how *doing a continuous CTG in a low risk mother can be counterproductive and could increase chances of operative delivery.*



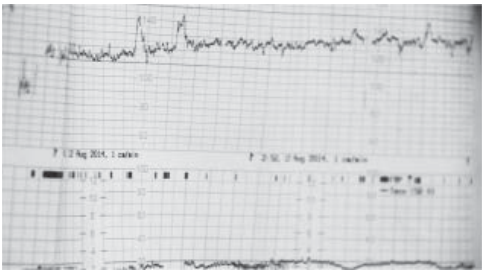
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**B**

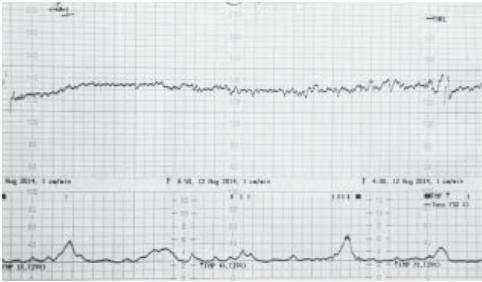


**C**

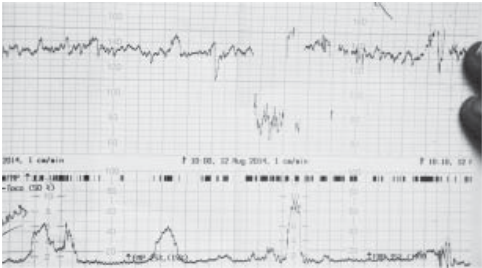


**D**

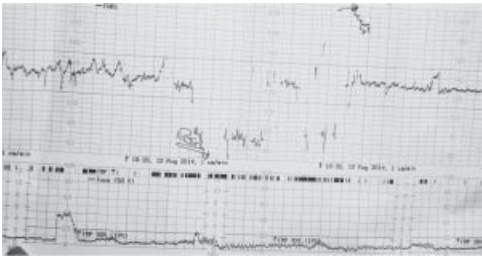




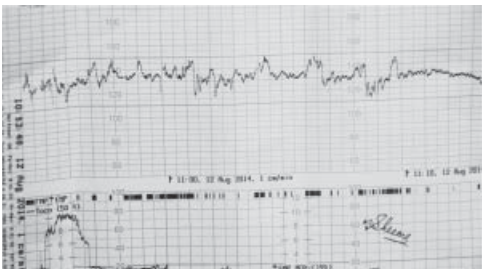
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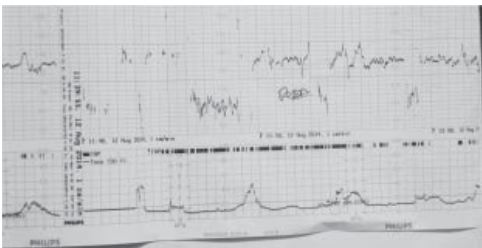
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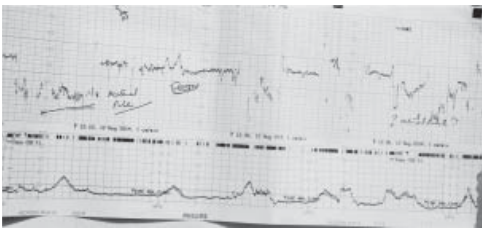
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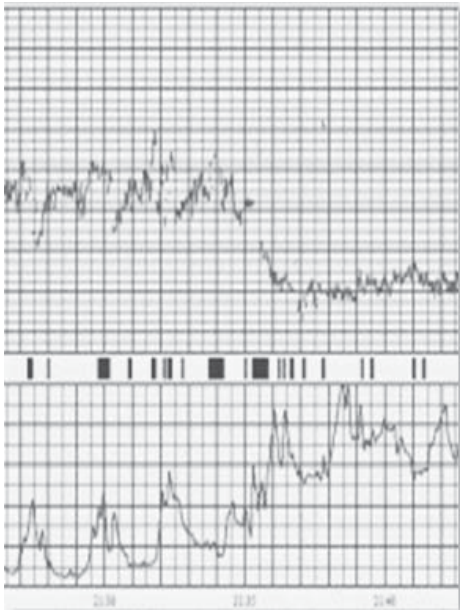
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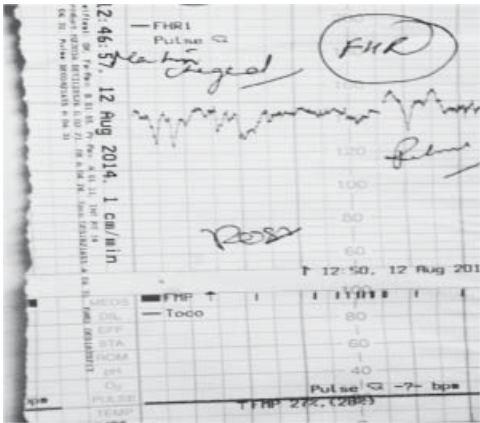
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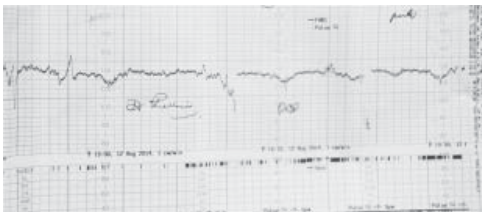
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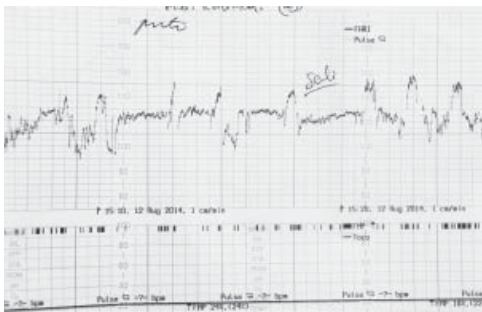
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M



N

Figure 1: CTG

## Suggested Reading

1. Lewis D, Downe S. FIGO consensus guidelines on intrapartum fetal

- monitoring: Intermittent auscultation. *Int J Gynecol Obstet* 2015;131:9–12.
- National Institute for Health and Clinical Excellence. Intrapartum care for healthy women and babies. *NICE* 2014:1–58.
  - The American College of Nurse-midwives. Intermittent Auscultation for Intrapartum Fetal Heart Rate Surveillance (replaces ACNM Clinical Bulletin #9, March 2007). *J Midwifery Women's Heal* 2010;55:397–403.
  - American College of Obstetrics and Gynecology. Intrapartum Fetal Heart Rate Monitoring: Nomenclature, Interpretation, and General Management Principles. *Obstet Gynecol* 2009;114:192–202.
  - Interpretation of cardiotocograph traces. <https://www.nice.org.uk/guidance/cg190/resources/interpretation-of-cardiotocograph-traces-pdf-248732173>. (accessed on 14th September 2019).

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