

A Prospective comparative analysis of Intrapartum Labour Dynamics Progression & Perinatal Prognosis (Outcomes) in Primi VS Multipara through systematic vigilant monitoring with Modified WHO Partograph at Govt. Nizamia Tibbi College & General Hospital, Hyderabad.

Dr. Umme Sana Khair ¹, Dr. P. Nazia Farheen ², Dr. Mohammad Imran Ansari ³, Dr. V. Zahida Banu ⁴,
Dr. Mohd. Wajid Abdul Aziz Shaikh ⁵, Dr. Syed Mumshad Ahammed ⁶

¹ Associate Professor & HOD, Dept. of Amraz-e-Atfal wo Naumulood, Markaz Unani Medical college and Hospital. Kozhikode. Kerala. India

² Professor & HOD, Dept. of Tahaffuzi wa Samaji Tib, Markaz Unani Medical College and Hospital. Kozhikode. Kerala. India

³ Professor & HOD, Dept. of Ilaj-e-Bit Tadbeer, HMS Unani medical college and Hospital, Tumkur, Karnataka. India

⁴ Assistant Professor, Dept. of Tahaffuzi wa Samaji Tib, Markaz Unani Medical College and Hospital. Kozhikode. Kerala. India

⁵ Associate Professor, Dept. of Mahiyatul Amraz, Markaz Unani Medical College and Hospital. Kozhikode. Kerala.India

⁶ Professor, Dept. of Ilmul-Jarajat, Markaz Unani Medical college and Hospital. Kozhikode. Kerala. India..

Cite this paper as: Dr. Umme Sana Khair , Dr. P. Nazia Farheen , Dr. Mohammad Imran Ansari , Dr. V. Zahida Banu , Dr. Mohd. Wajid Abdul Aziz Shaikh , Dr. Syed Mumshad Ahammed (2025) A Prospective comparative analysis of Intrapartum Labour Dynamics Progression & Perinatal Prognosis (Outcomes) in Primi VS Multipara through systematic vigilant monitoring with Modified WHO Partograph at Govt. Nizamia Tibbi College & General Hospital, Hyderabad.. Journal of Neonatal Surgery, 14, (32s) 11263-11279

ABSTRACT

Labour is a critical physiological process that requires continuous monitoring to prevent maternal and neonatal complications. The Modified WHO Partograph is a standardized tool designed to assess labour progress, identify deviations, and guide timely interventions. This prospective observational study was conducted in the Department of Ilmul Qabalat wa Amraz-e-Niswan Govt. Nizamia Tibbi College & General Hospital, Hyderabad, to evaluate labour progression and perinatal outcomes among primipara and multipara women monitored using the Modified WHO Partograph. A total of 55 women, comprising 10 primipara and 45 multipara, with full-term uncomplicated pregnancies were included. Clinical assessment, repeated vaginal examinations, fetal monitoring, maternal vital monitoring, and partographic recording of cervical dilatation, fetal descent, uterine contractions, fetal heart rate, membrane status, moulding, and maternal parameters were performed. Abnormal patterns of labour includes arrest of descent, protracted descent, failure of descent, and arrest of dilatation. Protracted descent was the most frequently observed abnormality, accounting for 63.6% of abnormal labour cases, while arrest of descent, failure of descent, and arrest of dilatation accounted for 18.2%, 9.1%, and 9.1%, respectively. Most cases of abnormal labour resulted in spontaneous vaginal delivery, while some required instrumental delivery or LSCS. The findings indicate that systematic monitoring using the Modified WHO Partograph facilitates early detection of abnormal labour and supports timely obstetric intervention, thereby contributing to favourable maternal and perinatal outcomes....

Keywords: Modified WHO Partograph; Primipara; Multipara; Labour Progress; Perinatal Outcome; Cervical Dilatation; Abnormal Labour; Obstetric Monitoring; Descent of Fetal Head; Labour Management...

INTRODUCTION OF PRIMIPARA, MULTIPARA, GRAND MULTIPARA IN PREGNANCY. 1-5

Primipara Pregnancy: A woman who is considered primipara has only experienced one pregnancy that has lasted for longer than 20 weeks. The root "primi" means "one" within this context. A woman who has had two pregnancies would be considered multigravida, but if only one pregnancy was full-term, she would only be considered primipara and noted as "gravidity 2" (two pregnancies) "parity 1" (only one pregnancy lasting beyond 20 weeks).

Grand multipara Pregnancy: A woman considered to be a grand multipara has experienced five or more viable pregnancies lasting longer than 20 weeks. This is an increasingly rare occurrence in modern society, especially in comparison to child birth rates following World War II. If a woman undergoes ten or more viable pregnancies, she is known as a great-grand multipara.

Multipara in pregnancy: Parity is the medical term used to describe pregnancies that have lasted for 20 weeks or longer, while gravida describes pregnancy in general. A woman who has become pregnant two or more times is considered multigravida, and if those pregnancies last beyond 20 weeks each, the woman will be classified as multipara. In this sense, "multi-" means "more than one," while "-para" refers to parity.³⁻⁴

Each day thousands of women around the globe give birth to children. While many of these instances involve first-time childbearing, a significant number include women who have given birth for at least a second time. The Childbirth is not devoid of risk, emphasizing the importance of understanding a woman's obstetrical history to determine the potential risks exposed before, during, or after a pregnancy. In order to simplify the complicated information that must be understood, specific medical terminologies such as "multipara," "grand multipara," and "multigravida" are used to describe the obstetrical history.¹⁻⁵

Term	Definition	Obstetric significance
Primigravida (G1)	A woman who is pregnant for the first time, irrespective of the outcome of the pregnancy.	Requires careful monitoring because the first labour may be relatively prolonged and the woman has no previous labour experience.
Primipara / Primiparae	A woman who has given birth once to a fetus/fetuses reaching the accepted age of viability, irrespective of whether the infant was liveborn or stillborn.	Labour may be longer, particularly the first stage, and close monitoring of cervical dilatation and fetal descent is important.
Multigravida	A woman who has been pregnant two or more times , irrespective of pregnancy outcome.	Previous obstetric history provides important information for management of the current pregnancy and labour.
Multipara / Multiparae	A woman who has given birth two or more times after reaching the accepted age of viability.	Labour may differ from that of primiparae; previous obstetric history and complications should be considered.
Grand multipara	A woman who has given birth five or more times after reaching the accepted age of viability.	May be associated with increased risk of malpresentation, abnormal placentation, postpartum haemorrhage and other obstetric complications, particularly when associated with advanced maternal age or previous uterine surgery.
Great grand multipara	A woman who has given birth ten or more times after reaching the accepted age of viability.	Represents a higher-parity group requiring individualized obstetric assessment and careful intrapartum monitoring.

The term **multipara** is used to describe the number of pregnancies and child births that a woman has experienced. More specifically, multipara means to describe a woman who has experienced two or more viable pregnancies which result in potentially viable offspring. In order for a pregnancy to be considered viable, it must have lasted for at least 20 weeks. Although the multipara definition may suggest that all multipara births are healthy and alive, the term is used to describe deliveries regardless of the outcome (both living and deceased).

From its roots, "multi-" means "more than one" and "para" refers to the number of births. **Parity** is the medical term used to indicate a number of pregnancies lasting greater than 20 weeks, with the root "multi-" simply being used to denote a number greater than one. For example, a woman who has experienced two full-term pregnancies and has given birth twice would be noted as "parity 2" because both pregnancies advanced beyond 20 weeks. The woman would be considered a multipara for this reason. By contrast, the term **primipara** is used to describe women who have experienced one viable pregnancy.¹⁻⁵

II. Introduction of Labour⁵⁻⁷

Labour has been regarded as the most dangerous journey a human being ever under takes. An older belief the sun should never set twice in a labour! has scientific approach as any labour lasting for more than 24 hours is associated more commonly with maternal complication (viz. Obstructed labour, traumatic delivery, PPH, puerperal sepsis, vesicovaginal fistula) and Fetal complications (viz. Fetal hypoxia, infection). In India, Maternal mortality ratio in 2015 was 174/100000 live birth.

Every day, approximately 800 women die from preventable causes related to pregnancy and childbirth. The maternal mortality ratio in developing countries in 2013 was 230 per 100, 000 live births versus 16 per 100, 000 live births in developed countries. The major complications that account for nearly 75% of all maternal deaths are: post partum Hemorrhage (mostly bleeding after childbirth), infections (usually after childbirth) high blood pressure during pregnancy (pre-eclampsia and eclampsia), complications from delivery and unsafe abortion.⁸⁻¹⁰

Aspect	Description
Definition of Labour	Labour is a physiological process in which regular uterine contractions result in progressive cervical effacement and dilatation , followed by the delivery of the fetus and placenta through the birth canal.
Onset of Labour	Labour is considered to have commenced when regular uterine contractions are associated with progressive cervical effacement and dilatation.
First Stage	Extends from the onset of true labour pains to complete dilatation of the cervix (10 cm) .
Latent Phase	The early part of the first stage, characterized by cervical effacement and gradual cervical dilatation.
Active Phase	The phase during which cervical dilatation progresses more rapidly until complete dilatation.
Second Stage	Extends from complete cervical dilatation to delivery of the baby .
Third Stage	Extends from delivery of the baby to delivery of the placenta and membranes .
Fourth Stage	The immediate postpartum period following delivery of the placenta, during which the mother is closely observed for bleeding, uterine contraction, and other complications.
True Labour	Characterized by regular, progressively increasing uterine contractions accompanied by progressive cervical effacement and dilatation.
False Labour	Uterine contractions that are usually irregular and do not produce progressive cervical dilatation and effacement.
Progress of Labour	Assessed by cervical dilatation, cervical effacement, descent of the presenting part, uterine contractions, and maternal and fetal condition.
Monitoring of Labour	Systematic monitoring helps identify prolonged or abnormal labour and facilitates timely obstetric intervention.
Partograph	A graphical tool used to record and monitor the progress of labour and important maternal and fetal parameters.

Postpartum haemorrhage and sepsis are the most common causes of maternal death in developing countries, but obstructed labour and Uterine rupture may cause as many as 70% of all maternal deaths in some situations.

The World Health Organization recommends using the partograph to follow labour and delivery, with the objectives to improve health care and reduce maternal and fetal morbidity and death. The Partograph is a pre-printed paper form on which labour observations are recorded. The aim of the Partograph is to provide a pictorial overview of labour, to alert midwives and obstetricians to deviations in maternal or fetal wellbeing and labour progress. Partography is designed for all maternal settings, but has different level of functions at different levels of health care. It serves as an "early warning system" and assists in early decision on transfer, augmentation and termination of labour.

The first WHO partograph or Composite partograph, covers a latent phase of labour of up to 8 hours and an active phase beginning when the cervical dilatation reaches 3 cm. The active phase is provided with an alert line and an action line, drawn 4 hours apart on the partograph as aids for monitoring Labour. This partograph is based on the principle that during active labour, the rate of cervical dilation should not be slower than 1 cm/hour. A lag time of 4 hours between slowing of labour and the need for intervention is unlikely to compromise the foetus or the mother and avoids unnecessary intervention.

Following problems were encountered subsequently with routine practice of composite partograph-

Problems with diagnosis of labour as there are no universally acceptable definite criteria to diagnose labour.

Varying length of latent phase of labour leads to make it difficult to interpret when to interfere.

Difficult to follow with frequent mistakes.

Unnecessary intervention in the form of increased referral to tertiary care centre, augmentation and increased rate of caesarean section.

In 2000, WHO Modified Partograph was introduced, following the launch of integrated management of pregnancy and child birth in managing complication in pregnancy and childbirth. In WHO modified partograph latent phase has been excluded and active phase has been considered at 4 cm of cervical dilatation.

III. Physiology of first stage of labour:¹⁰⁻¹⁵

Uterine Action

Fundal dominance: Each uterine contraction starts from the fundus near the cornua and spreads across and down wards. The contraction lasts longer in the in the fundus where it is most intense but the peak is reached simultaneously over the whole uterus and the contractions fade from all parts together. This permits the cervix to dilate and the strongly contracting fundus to expel the fetus.

Polarity: This is a neuromuscular harmony that prevails between the two poles of the uterus throughout labour. During a contraction, these two poles act harmoniously. The upper uterine segment contracts strongly and retracts to expel fetus and the lower pole contracts slightly and dilates to allow expulsion of the fetus. If polarity is disorganized, labour progress is inhibited.

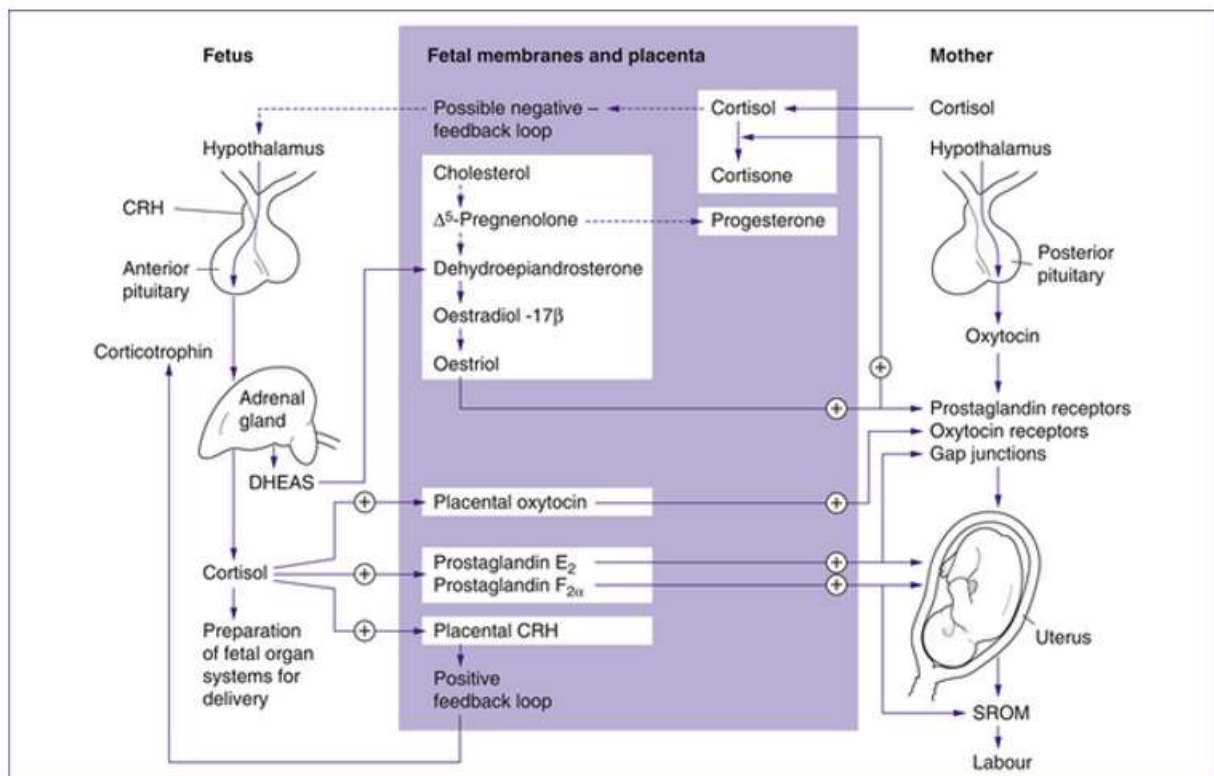


Fig. 01 Physiology of Labour During Pregnancy

Contraction and retraction: During labour, a contraction does not pass off entirely but muscle fibres retain some of the shortening contractions instead of becoming completely relaxed. This is termed as *retraction*. This is a unique property of the uterine muscles and because of this, the upper uterine segment becomes shorter and thicker and diminishes its cavity thereby assisting in expulsion of the fetus.

Formation of the upper and lower uterine segment: By the end of pregnancy, the body of the uterus has divided into two segments; The upper segment is mainly contractile muscular and thicker, while the lower uterine segment is for distension and dilatation and is thinner. The lower segment develops from the isthmus and is about 8-10cm in length.

Retraction ring: This is a ridge formed between the upper and lower uterine segment. The physiological retraction ring gradually rises when the upper uterine segment contracts and retracts and lower uterine segment thins out to accommodate the descending fetus. This ring is not usually visible and when cervix is fully dilated and the fetus can be expelled from the Uterus, it rises no further. An exaggerated phenomenon of retraction ring in obstructed labour it becomes visible above the symphysis pubis. This is termed as a Bundle's ring

2. Cervical Action

A. Cervical effacement: This is inclusion of the cervical canal. The muscle fibres surrounding the internal os are drawn upwards by the retracted upper uterine segment and the cervix merges into the lower uterine segment.

B. Cervical dilatation: This is the process of enlargement of the os from a tightly closed aperture to an opening large enough to permit passage of the fetal head. It is measured in cm. a full dilatation at term equates to 10cm. Pressure applied by the bag of fore waters and a well flexed fetal head closely applied to the cervix Favours efficient dilatation.

C. Show: This is blood-stained mucus which is seen before or at the onset of labour. The mucus is a thick mucoid substance which forms the cervical plug (opercutium) during pregnancy. Blood comes from ruptured capillaries when the chorion has become detached from the dilating cervix.

3. Mechanical Factors

A. Formation of fore waters: As the lower uterine segment stretches, the chorion becomes detached from it and the increased intrauterine pressure causes this loosened part of the sac of fluid to bulge downwards into the dilating internal os. A well flexed head fits snugly into the cervix and cuts off the fluid in front of the head from that surrounding the body. The water in front is known as fore waters and that behind is called hind waters.

B. General fluid pressure: When the membranes are intact, the pressure of the uterine contractions is exerted on the fluid and since the fluid is not compressible, the pressure is disturbed on the uterus and over the fetal body. This is termed as general fluid pressure. When membranes rupture and a quantity of fluid escapes, the fetal head, placenta and umbilical cord will be compressed between the uterine wall and the body of fetus during contraction resulting in reduced oxygen supply to the fetus

Rapture of membranes: The optimum physiological moment for membranes to rupture is at the end of 1st stage of labour when the cervix becomes fully dilated and no longer supports the bag of fore water. The uterine contractions are also applying increasing expulsive force at this time. Membranes may also rupture days before labour begins or during 1st stage of labour especially in a badly fitting presenting part. Occasionally, membranes do not rupture even in the 2 stage and appear at the vulva as a bulging sac covering the fetal head as it is born. This is known as caul

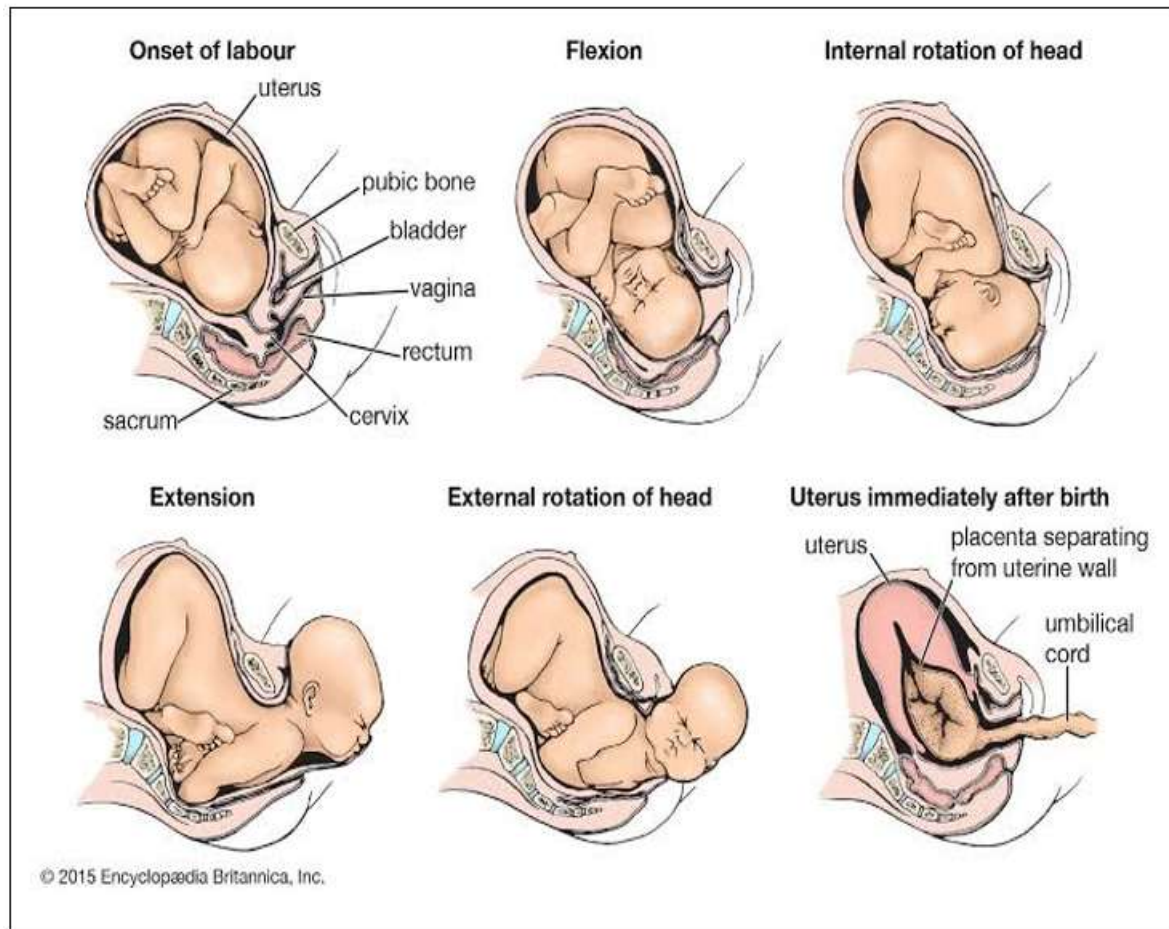


Fig. 02 Sequential Changes in Position of child during labour

D. Fetal axis pressure: During the contraction, the uterus rises forward and the force of fundal contraction is transmitted to the upper pole of the fetus down the long axis of the fetus and is applied to the cervix by the presenting part. This becomes more significant after rupture of membranes and during the 2 stages of labour.

E. Descent of the presenting part: It refers to the downward and outward movement of the presenting part through the pelvis. The normal well flexed head twists and turns, flexes and extends to maneuver through the pelvis. There are 3 planes or obstacles involved in the process of descent:

F. Pelvic inlet/ brim : Engagement occurs when the largest transverse diameter of the presenting part has passed through the pelvic brim. Clinically when no more than one fifth of the total head is palpable above the pelvic brim and there is pelvic brim mark the head is said to be engaged. The presenting part being at the level 0, not the inlet.

When the presenting part is at the level of the ischial spines, a pelvic brim mark, it indicates the largest part of the head has come through the brim. The head is thus engaged.

G. Pelvic cavity.: When the presenting part has descended to the perineum, the largest part has passed the ischial spines. The head is now at station 2.

H. Pelvic outlet: Delivery of the head brings it past the 3rd obstacle (pelvic outlet), which is under the pubic arch, anteriorly the ischial tuberosities laterally and over the tip of the posterior overlying coccyx. NB: station is the relationship of the lowermost part of the presenting part to an imaginary line drawn between the ischial spines and the maternal pelvis. It is expressed in Centimeter above (-) or below (+) the ischial spines. When the presenting part is at the level of the ischial spine it is at station 0.

IV. Management of First Stage of Labour

Vaginal examination.

Aspect	Description
Definition	Vaginal examination (VE) is a clinical procedure performed through the vagina using sterile/aseptic technique to assess the genital tract and determine obstetric findings such as cervical effacement, cervical dilatation, presenting part, position, station, and status of the membranes.
Purpose	To assess the progress of labour, identify obstetric abnormalities, and determine the stage and progress of labour when clinically indicated.
Important principle	Vaginal examination should be performed only when clinically indicated, with informed consent, appropriate privacy, hand hygiene and aseptic precautions.

Contraindications of VE

S. No.	Contraindication / Situation	Reason / Explanation
	Active vaginal bleeding / Antepartum haemorrhage (APH)	Digital vaginal examination should generally be avoided until placenta previa has been excluded, as it may provoke severe haemorrhage.
2	Suspected placenta previa	A digital examination may traumatize the placenta and cause severe maternal haemorrhage.
3	Recent pelvic surgery or significant pelvic trauma	Healing or traumatized tissues may be vulnerable to further injury. Examination should be performed only when clinically justified.
4	Suspected or confirmed ectopic pregnancy	Vaginal examination should be performed cautiously and only when clinically necessary, particularly in an unstable patient.
5	Suspected cervical insufficiency	Unnecessary digital manipulation may cause discomfort or potentially contribute to cervical changes; assessment should be individualized.
6	Active genital tract or pelvic infection	Examination may cause pain and may potentially introduce or spread infection; appropriate precautions are required.
7	Preterm prelabour rupture of membranes (PPROM)	Digital vaginal examinations should generally be avoided unless delivery is imminent or there is another clear indication, because repeated digital examinations increase infection risk.
8	Severe pain or discomfort	The procedure should be stopped or deferred and the cause of pain assessed.
9	Patient refusal / absence of consent	Vaginal examination must not be performed without appropriate informed consent, except in exceptional circumstances permitted by law and emergency practice.
10	Elective caesarean section when VE is not clinically indicated	Routine vaginal examination is unnecessary unless a specific obstetric indication exists.

Complications of VE

No.	Complication	Description
1	Discomfort or pain	VE may cause discomfort or pain, particularly when the woman is anxious, tense, or the examination is repeated.
2	Minor vaginal bleeding / spotting	Minimal spotting may occur following examination because of cervical or vaginal contact. Significant or persistent bleeding requires immediate assessment.
3	Trauma or laceration	Improper or forceful examination may cause trauma to the vaginal wall, cervix, or other soft tissues.
4	Infection	Inadequate hand hygiene or aseptic technique may introduce microorganisms and increase the risk of genital tract infection.
5	Increased risk of infection after rupture of membranes	Repeated digital examinations after rupture of membranes can increase the risk of ascending infection.
6	Accidental rupture of membranes	Manipulation during examination may occasionally contribute to rupture of intact membranes, particularly when the membranes are bulging or fragile.
7	Psychological discomfort	Repeated or poorly explained examinations may cause anxiety, embarrassment, distress, or loss of dignity.
8	Aggravation of bleeding in placenta previa	Digital examination in undiagnosed placenta previa can precipitate severe haemorrhage and should therefore be avoided until placenta previa has been excluded.

Aims & Objectives

Aims: The aim of the study is to analyse perinatal outcome and the progress of spontaneous Labour in primigravida and multigravida progress by means of partogram and the active management of Labour based on partographic parameters.

Objectives: The objectives were to study the course of normal and abnormal Labour. To study various types of abnormalities of active phase of Labour and to evaluate the maternal and perinatal outcome in normal Labour. To assess the progress of Labour and thereafter identify if intervention is needed using modified WHO partograph & to evaluate the neonatal outcome in cases of normal and abnormal Labour.

Active management of the third stage involves:

Prophylactic administration of a parenteral oxytocic drug

Earlier clamping of the umbilical cord

Controlled cord traction

Active management of the third stage significantly reduces:

Moderate hemorrhage (500-1000 ml)

Severe hemorrhage (>1000ml)

Postpartum maternal haemoglobin of < 9g/dl

Postnatal blood transfusion

The need for therapeutic oxytocin

The third stage lasting > 20 minutes

Active management of the third stage of Labour with prophylactic oxytocic drugs and cord traction has reduced the incidence of serious complications following delivery. Some complications such as retained placenta and uterine inversion may increase as a result of active management. Careful implementation of active management policy is necessary to ensure that

the risk of these complications is low and hence acceptable in the context of prevention of postpartum hemorrhage.

The study was conducted in the Dept. of Ilmu Qabalat wa Amraz e Niswan, Govt Nizamia Tibbi College and General Hospital, Hyderabad.

Study design: Prospective observational clinical study.

Duration of study: one and half year.

Sample size: 40.

keeping in consideration the availability of patients and limited resources 55 patients

are recruited for the present study i.e. 45 multi gravidae and 10 primigravidae.

Ethical clearance: The study protocol was approved by institutional ethical committee of Govt Nizamia Tibbi College, Hyderabad, after which the study was performed.

Methods of collection of Data:

Cases reporting to Labour room with full term pregnancy with vertex presentation, without any obvious risk factors and those who were suitable for vaginal delivery, on initial examination.

Labouratory investigations.

Criteria for the selection of subjects:

The patients were enrolled in the study after fulfilling the following criteria. **Inclusion criteria:**

Pregnant women with single Fetus with uncomplicated full-term pregnancy (38 - 40 weeks of gestation).

The study entitled was conducted in the Dept. Ilmu Qabalat wa Amraz e Niswan, Govt Nizamia Tibbi College and General Hospital, Hyderabad, Study design: Prospective observational clinical study.

Duration of study: one and a half year. **Sample size: 55.**

Keeping in consideration the availability of patients and limited resources 55 patients are recruited for the present study i.e. 45 multi gravided and 10 primigravidae.

Ethical clearance: The study protocol was approved by institutional ethical committee, **Govt Nizamia Tibbi College; Hyderabad; after which the study was performed**

Methods of collection of Data:

Cases reporting to Labour room with full term pregnancy with vertex presentation, without any obvious risk factors and those who were suitable for vaginal delivery, on initial examination.

Labouratory investigations.

Criteria for the selection of subjects:

The patients were enrolled in the study after fulfilling the following criteria.

Inclusion criteria:

Pregnant women with single Fetus with uncomplicated full-term pregnancy (37 -40 weeks of gestation).

Premature rupture of membranes (PROM).

Grade 1 Meconium-stained liquor,

Post Term Pregnancy

Pregnancy induced hypertension.

Polyhydramnios AFI < 20cms

Oligohydramnios AFI not less than 8cms.

Exclusion criteria: Patients with

Gestational age less than 37 weeks.

Associated fetal malformations.

Malpresentation.

Multiple gestation.

CPD.

Contracted pelvis.

Uterine scar due to previous LSCS, myomectomy, and hysterectomy.

Intrauterine growth restriction (IUGR).

Intrauterine fetal deaths (IUFD).

Fibroid complicating pregnancy.

Systemic diseases.

High risk pregnancy

Placental insufficiency like

Essential hypertension.

Preeclampsia.

Gestational diabetes mellitus.

Chronic renal disease.

Patients fulfilling the inclusion criteria mentioned above were given the information of having details regarding the nature of study, the need for the repeated vaginal examination, uterine contractions are observed every half-hourly for 10minutes, Auscultation of fetal heart sounds and monitoring of maternal vitals. Patients were given enough time to go through the study details mentioned in the information They were given the opportunity to ask any question and if they agree to participate in the study, they were asked to sign the informed consent.

Procedure of the study:

Patients fulfilling inclusion criteria were enrolled in the study after obtaining informed consent form. With each patient a detailed obstetric history regarding married life, history of consanguinity, LMP, EDD, gravid, parity, live children, abortions, death was obtained. Duration Labour pains and presence of associated symptoms were enquired; menstrual characteristics regarding length of cycle, days of bleeding, amount of bleeding was also recorded. Participants underwent a complete physical examination, including weight, and vitals were recorded. Per abdomen examination was carried out by Leopold's maneuvers. Height of uterus, fullness of flanks was noted. Lie, presentation and position of the Fetus were confirmed. Amount of liquor was noted.

Part of head palpable per abdomen in fifths was noted.

Duration, intensity and frequency (per ten minutes) of uterine contractions were noted. Labour pains and presence of associated symptoms were enquired.

Vaginal examination is done at the time of admission to know the cervical effacement, cervical dilatation, presenting part, station of presenting part, status of the membranes and shape of the pelvis is noted.

Assessment of progress of Labour:

The Modified WHO partograph involves various parameters to assess progress of Labour, maternal and fetal conditions during Labour, and all the parameters are plotted graphically on a single sheet of paper. The parameters are as mentioned below.

Parameters used to assess progress of Labour:

Cervical dilatation:

If a woman arrives in the active phase of Labour, recording of cervical dilatation starts on the alert line. When the active phase of Labour begins, all recordings are transferred and start by putting cervical dilatation on the alert line. It is assessed at every vaginal examination and is the most important observation to monitor progress of Labour. It also Indicates the onset of Labour. Cervical dilation in term of finger 1,2,3, or fully dilated or better in term of centimeter. 1 finger is equal to 1.6 cm attachment is expressed in terms of percentage i.e. 25 %, 50 %, 100 %.

It should be assessed by abdominal examination immediately before doing a vaginal examination, using the rule of fifths to assess engagement. The rule of fifths means the palpable fifths of the fetal head are felt by abdominal examination to be above the level of symphysis pubis.

When 2/5 or less of fetal head is felt above the level of symphysis pubis, this means that the head is engaged, and by vaginal examination, the lowest part of vertex has passed or is at the level of ischial spines.

Assessing descent of the fetal head by vaginal examination. In relation to Ischial spines and '0' station is at the level of the ischial spine.

Descent of the head is assessed by abdominal examination in fifths (5ths) and confirmed on vaginal examination by station of the fetal head in relation to ischial spines. The descent is recorded as **triangle A**

Uterine contractions: Contractions are assessed along with cervical dilatation and descent of the fetal head into the maternal pelvis. The contractions are observed every half hourly by feeling with hand placed on the abdomen of the mother in Labour. The no. of contractions in 10min and their duration in seconds is noted.

Observations of the contractions are made every hour in the latent phase and every half-hour in the active phase.

Frequency - Assessed by number of contractions in a 10 minutes period.

Duration - Measured in seconds from the time the contraction is first felt abdominally, to the time the contraction phases off.

Each square represents one contraction.

Palpate number of contractions in ten minutes and duration of each contraction in seconds.

Less than 20 seconds.

Between 20 and 40 seconds

More than 40 seconds.

Recording contractions

duration of construction

Palpate number of contractions in ten minutes and duration of each contraction Between 20 and 40 seconds More than 40 seconds. Parameters use to assess fetal condition:

Fetal heart rate: fetal heart rate is recorded at the top of the graph every half hourly. Each square represents 0 minutes. The beats per minute indicated on the partograph ranges from 100-180 beats per minute with the lines for 120 and 160 beats per minute being represented with the darker lines for that these are the normal limits. When fetal heart rate is less than 120 and more than 160 beats, it requires immediate action.

>160 beats / min = Tachycardia

< 110 beats / min = Bradycardia

<100 beats / min severe bradycardia

Status of membranes: Membranes usually remain intact until full dilation if ruptured then assess the colour of liquor.

Color of liquor:

The color of Amniotic fluid is recorded at every vaginal examination. The membranes are determined by vaginal examination as to whether they are intact or ruptured. If ruptured liquor can be seen, Ruptured membranes + Clear liquor will be marked as "C" on partograph.

Ruptured membranes + Meconium-stained liquor marked as "M" on Partograph.

Ruptured membranes Blood-stained Liquor Marked as "B" on partograph

Ruptured membranes + Absent liquor Marked as "A" on Partograph

Molding of fetal skull: Molding is assessed on vaginal examination by feeling the overlapping of fetal skull bones at the sutures.

0: no molding.

□ +: sutures are opposed.

□ ++: sutures overlapped but reducible.

+++ : sutures overlapped and not reducible.

Parameters use to assess maternal conditions:

Pulse rate: pulse recorded every 30minutes and marked with a (.)

Blood pressure is recorded every 4th hourly.

Temperature is recorded every 2nd hourly.

Every Women during progress of Labour is encourage to pass urine 2-4 hourly. The amount is recorded every time. Urine is passed and tested for protein and ketones. Alert line (health facility line)

The alert line drawn from 4 cm dilatation represents the rate of dilatation of 1 cm/hour. Moving to the right or the alert line means referral to Hospital Tertiary Center for extra Vigilance. Action line (hospital line) The action line is drawn 4 hours to the right of the alert line and parallel to it. This is the critical line at which specific management decisions must be made at the hospital

Observation and Results:

Distribution of patients according to Gestational Age Primipara & multipara				
Gestational Age	Primipara		Multipara	
	No. of Patients	Percentage	No. of Patients	Percentage
37-38	3	30	8	26.7
39.1-39	2	20	7	23.3
39.1-40	4	40	10	33.3
40.1-41	1	10	5	16.7
total	10	100	30	100

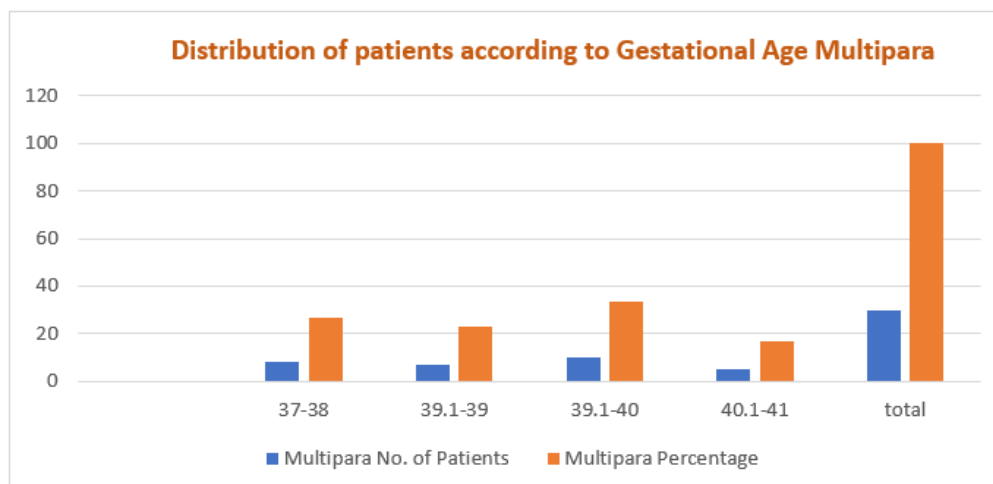
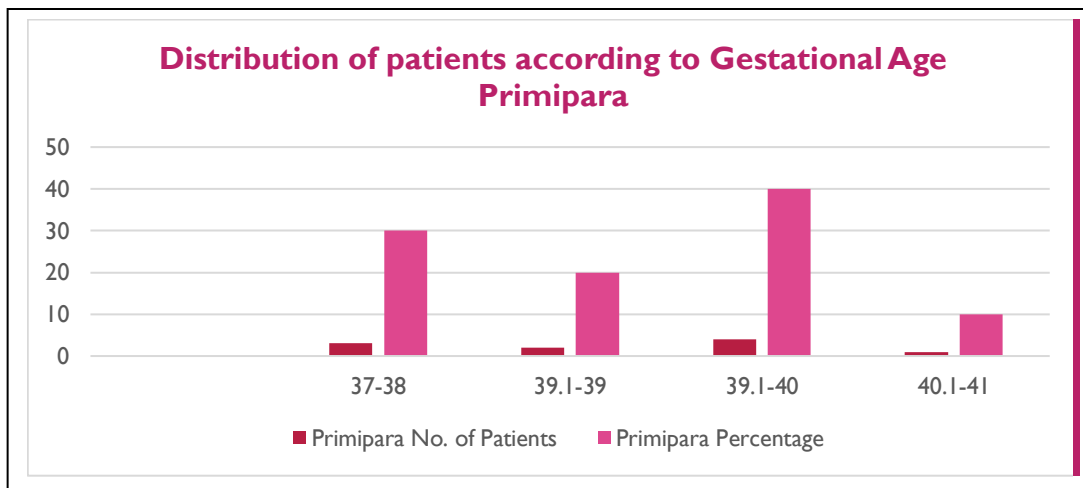
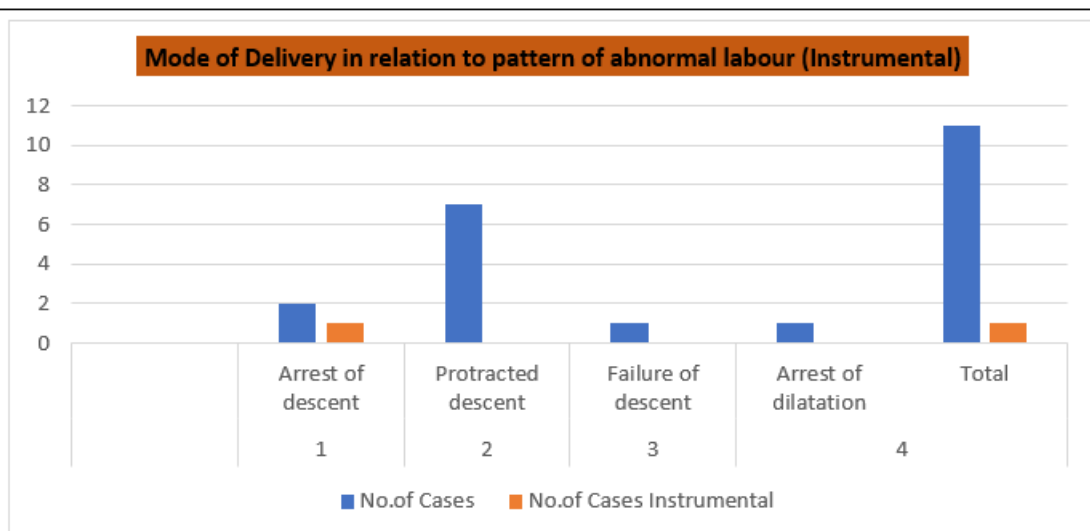
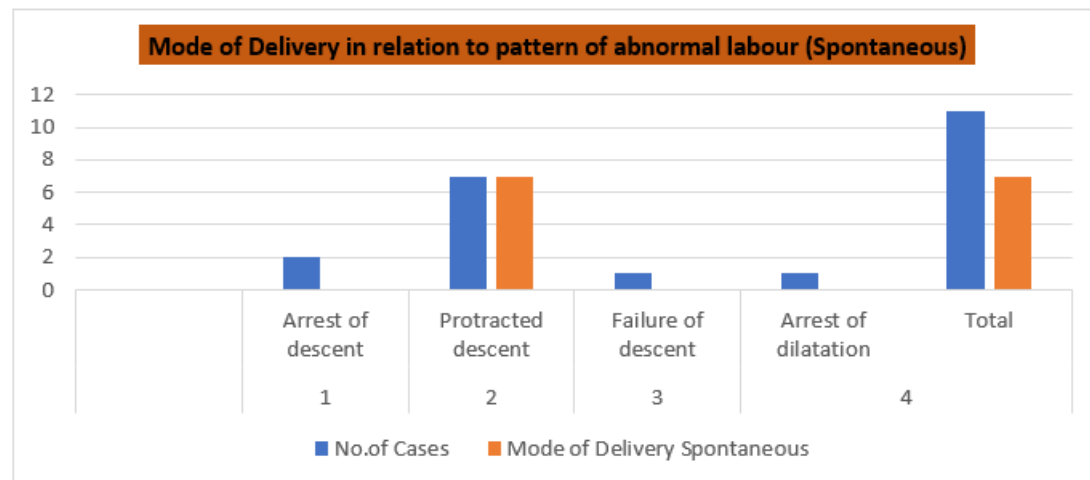
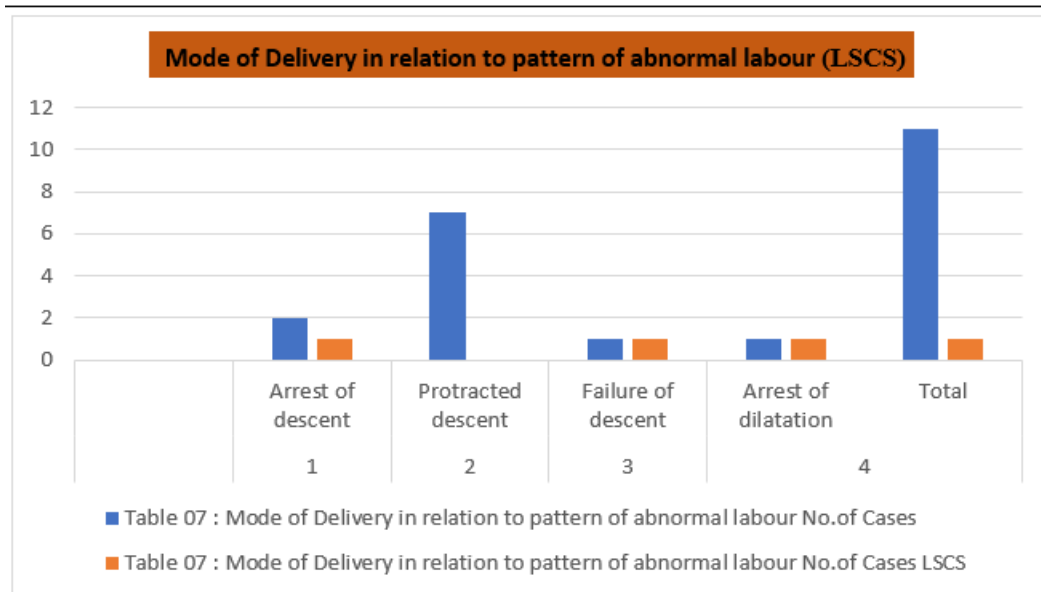
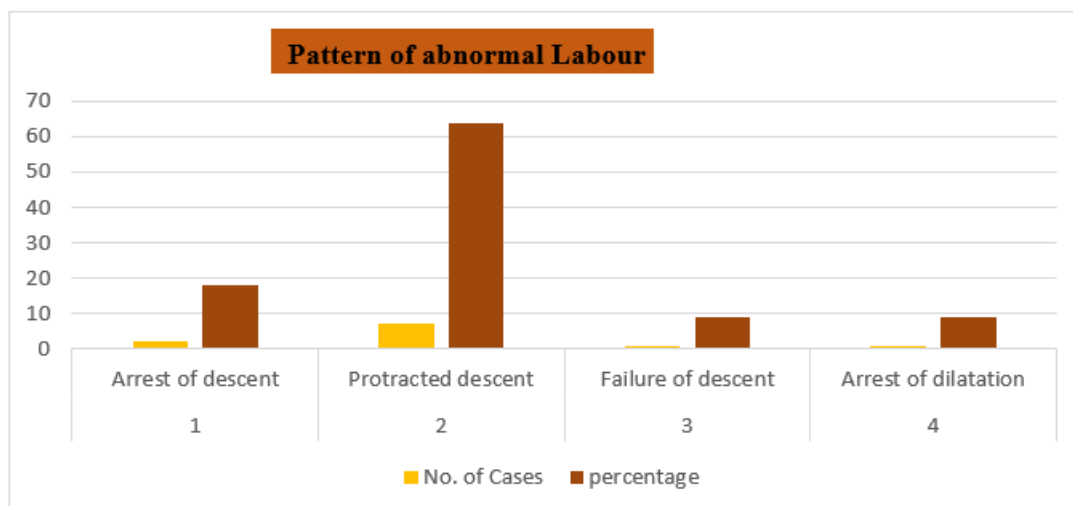


Table 07 : Mode of Delivery in relation to pattern of abnormal labour					
S. NO.	Pattern of abnormal Labour	No. of Cases	Mode of Delivery		
			Spontaneous	Instrumental	LSCS
1	Arrest of descent	2	0	1	1
2	Protracted descent	7	7	0	0
3	Failure of descent	1	0	0	1
4	Arrest of dilatation	1	0	0	1
	Total	11	7	1	1





Pattern of abnormal Labour			
s no	Mode of Delivery	No. of Cases	percentage
1	Arrest of descent	2	18.2
2	Protracted descent	7	63.6
3	Failure of descent	1	9.1
4	Arrest of dilatation	1	9.1
	Total	11	100



DISCUSSION

The present prospective observational study was conducted to assess the progress of labour and perinatal outcome among

primipara and multipara women using the Modified WHO Partograph. The study emphasizes the importance of systematic monitoring of cervical dilatation, descent of the fetal head, uterine contractions, fetal heart rate, membrane status and maternal condition during labour. The Modified WHO Partograph provides a graphical representation of these parameters and helps in the early identification of abnormal labour and timely obstetric intervention.

In the present study, 55 women were recruited, including 10 primipara and 45 multipara women. The majority of the study participants were multipara. The gestational-age distribution showed that most women were between 39.1 and 40 weeks of gestation. Among primipara women, 4 cases (40%) were in the 39.1–40 week group, while among multipara women, 10 cases (33.3%) belonged to the same gestational-age group.

The study identified **11 cases of abnormal labour**. Among these, **protracted descent was the most common abnormality**, accounting for 7 cases (63.6%). Arrest of descent was observed in 2 cases (18.2%), while failure of descent and arrest of dilatation were each observed in 1 case (9.1%). These findings demonstrate the usefulness of monitoring fetal descent and cervical progress on the partograph for identifying deviations from normal labour progression.

The mode of delivery in abnormal labour showed that all 7 cases of protracted descent resulted in spontaneous vaginal delivery. One case of arrest of descent required instrumental delivery and another required LSCS. Failure of descent and arrest of dilatation each resulted in LSCS. Thus, the partographic assessment helped in recognizing cases where labour was not progressing normally and where intervention was required.

The Modified WHO Partograph is particularly useful because cervical dilatation, fetal descent and uterine contractions are assessed together rather than in isolation. Fetal heart rate, membrane status and moulding provide additional information about fetal wellbeing, while maternal pulse, blood pressure, temperature and urine assessment help monitor the mother's condition. The study protocol included repeated clinical assessment and monitoring of these parameters throughout labour.

The study also highlights the importance of the **alert line and action line**. The alert line represents the expected progress of cervical dilatation, while crossing the alert line indicates the need for increased vigilance and possible referral. The action line, placed four hours to the right of the alert line, indicates the point at which specific management decisions may be required.

Overall, the findings support the role of the Modified WHO Partograph as a simple graphical tool for continuous intrapartum monitoring. Early recognition of abnormal cervical dilatation or fetal descent can assist healthcare professionals in deciding whether continued observation, referral, augmentation or operative intervention is appropriate. The observations of the present study therefore reinforce the importance of vigilant partographic monitoring in improving the management of labour and supporting favourable maternal and perinatal outcomes.

CONCLUSION

The present study demonstrates that **systematic monitoring of labour using the Modified WHO Partograph is an effective and useful method for assessing labour progression and identifying abnormal labour at an early stage**. Regular assessment of cervical dilatation, fetal descent, uterine contractions, fetal heart rate, membrane status, moulding and maternal parameters provides a comprehensive picture of maternal and fetal wellbeing during labour. In this study, **protracted descent was the most common abnormal pattern of labour**, followed by arrest of descent, failure of descent and arrest of dilatation. Partographic monitoring helped in recognizing abnormal progress and in determining the need for appropriate obstetric intervention, including instrumental delivery or LSCS where required. Thus, the **Modified WHO Partograph serves as a simple, practical and valuable tool for vigilant intrapartum monitoring**, facilitating timely decision-making and contributing to favourable maternal and perinatal outcomes.

REFERENCES

1. Friedman EA. An objective approach to the diagnosis and management of abnormal labour. Bull NY Acad Med. 1972;48:842.
2. Friedman EA. Labour, clinical evaluation and management, 2nd ed. New York, Appleton-Century Crofts, 1978.
3. Partogram Essential Antenatal, Perinatal and Postpartum Care, Copenhagen: World Health Organisation. 2002:184-94.
4. Hendricks CH, Brenner WE, Kraus G. Normal cervical dilation pattern in late pregnancy and labour. Am J Obstetrics gynaecology 1970;106:1065-82.
5. Beazley JM, Kurjak A. Influence of a partograph on the active management of labour. Lancet. 1972;2(7773):348-51.
6. Studd J, Clegg DR, Sanders RR, Hughes AO. Identification of high-risk labours by labour nomogram. Br Med J. 1975;7:545-7.

7. Studd JWW. Partograms and normograms in the management of primigravida labour. *Br Med J*. 1973; IV:451-5.
8. Allman ACJ, ESG Genevier, MR Johnson, PJ steer 1996. Head to cervix force: an important physiological variable in labour. *Br J Obstetrics gynaecology* 103:763-68.
9. Arulkumaran S, CH Koh, I Ingemarrson, SS Ratnam. 1987. Augmentation of labour. Mode of delivery related to cervimetric progress. *Aust. NZ J Obstetrics gynaecology* 27: 304-308.
10. World Health Organization. Maternal mortality rates: a tabulation of available information. Geneva, 1991; (WHO document WHO/MCH/MSM/91.6).
11. Philpott RH. Graphic record in labour. *BMJ*. 1972; 4:163-5.
12. Zaidi S. Seeking solutions. High maternal mortality in Pakistan. (ed) *J Coll Phys Surg Pak* 1993;31:2-3.
13. Harrison KA. Child bearing health and social priorities. A survey of 227,74 consecutive hospital births in Zaria. Northern Nigeria. *Br J Obstetrics gynaecology* 1985;92:1-119.
14. Situation assessment of the women and children in Bangladesh Bangladesh and UNICEF demographic health survey, 1999.
15. O'Driscoll K, Jackson RJA, Gallagher JT. Active management of labour and cephalopelvic disproportion. *J Obstetrics gynaecology Br Com Wealth* 1970;77:385-9.
16. Khan KS, Rizvi A, Rizvi JH. Risk of uterine rupture after the partographic alert line is crossed. An additional dimension in the quest towards safe motherhood in labour following caesarean section. *J Pak Med Assoc* 1996; 46:120-2.
17. Chazotte C, Cohen WR. Catastrophic complications of previous caesarean section. *Am J Obstetrics gynaecology* 1990; 163:738-42.
18. Cahill DJ, Boylan PC, O'Herlihy C. Does oxytocin augmentation increase perinatal risk in primigravid labour? *Am J Obstetrics gynaecology*, Knupel RA. A prospective randomized study of aggressive management of early labour. *Am J Obstetrics gynaecology* 1987; 157:1174-7.
19. Randhawa I, Gupta KB, Kanwal M. A study of prolonged labour. *J Ind Medical Assoc* 1991; 89:161-3.
20. Frigoletto FD, E Lieberman, JM Lang et al. 1995. A clinical trial of active management of labour. *N Eng J Med* 333:745-50.
21. Gibb DMF, LD Cardozo, JWW Studd, AL Magos, DJ Cooper. 1982. Outcome of spontaneous labour in multi-gravidae. *Br J Obstetrics gynaecology* 89:708-711
22. Gibb DMF, S Arulkumaran, KC Lun, SS Ratnam. 1984. Characteristics of uterine activity in nulliparous labour, *Br J Obstetrics gynaecology* 91:220-27.
23. Hendricks CH, WE Brenner, G Karus. 1970. Normal cervical dilatation patterns in late pregnancy and labour. *AM J Obstetrics gynaecology* 106: 1065-88.
24. Hendricks CH, WE Brenner, G Karus. 1970. Normal cervical dilatation patterns in late pregnancy and Labour. *AM J Obstetrics gynaecology* 106: 1065-88.
25. Study of course of labour by modified WHO partograph, Kunaal K Shinde, Vidyadhar B. Bangal, Rashmi K Singh, Rural Medical college, Paravara institute of Medical Sciences (Deemed University), Loni, District....