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## Chapter

# Intrapartum Care: What Does the Evidence Say?

*Julio Elito Junior and Jorge Francisco Kuhn dos Santos*

## Abstract

Childbirth is one of the most important moments in life. Delivery assistance is a major challenge today. Safety in childbirth care to avoid maternal-fetal morbidity and mortality is especially important. It is vital to avoid, on the one hand, the excess of medicalization with early and unnecessary interventions and, on the other hand, the lack of care that can lead to a delay in decision-making. In this delicate balance, it is also important to consider the expectation of the parturient with her desires related to how the birth she idealized will happen. Respecting her wishes without putting the maternal-fetal unity at risk is a great challenge for the obstetrician. It is important to avoid interventions as fundal pressure, routine episiotomy and the excess of unnecessary caesarean section. Cultural, socio-economical aspects and choosing the delivery mode are part of a big puzzle. This chapter aims to assess the best childbirth care among the scientific evidence and will cover the following topics: first stage of labor (differentiating latent from active phase), progression of the first and second stages of labor, pain relief during labor, prevention of postpartum hemorrhage, care of the newborn, and the puerperal woman.

**Keywords:** first stage of labour, second stage of labour, third stage of labour, postpartum haemorrhage, newborn

## 1. Introduction

In this chapter, the main care standards during labour and childbirth will be addressed. Several challenges related to labour assistance in the first, second and third stage will be presented based on the best scientific evidence.

## 2. First stage of labour

Delivery care begins with the correct diagnosis of first stage of labour: presence of at least two rhythmic and painful uterine contractions within 10 minutes, lasting around 30–50 seconds, with cervical changes.

An important point to consider is knowing how to differentiate the latent from the active phase of labour. In the latent phase, the parturient presents uterine contractions that cause changes in the process of effacement and dilation of the cervix, and this progression takes longer until reaching a dilation of 5 cm. On the other hand, in the

active phase of the first stage of dilation of labour, the rhythm of uterine contractions is regular, and at this stage there is already significant cervical effacement and the dilation of the cervix progresses at an accelerated rate from 5 cm until complete dilation.

Hospitalisation is recommended during the period of the active first stage of labour. When in doubt, a period of observation should be done [1].

During the active first stage of labour, the patient is hospitalised, after anamnesis and general physical and obstetrical examination. Labour can take several hours—in general the primiparous, up to 15 hours and, in the multiparous, 10 hours. However, the duration of latent phase is more difficult to estimate. On the other hand, when cervical dilation is 5 cm, the mean duration of the first active stage is approximately 4 hours in primiparous and 3 hours in multiparous.

An important point to be considered regarding the first stage of labour is to avoid perform interventions, sometimes unnecessary, only considering the duration of the cervical dilatation period [2].

To avoid prolonged fasting during labour, pregnant women can drink fluids and eat light meals.

The parturient is instructed to take a bath with antiseptic soap and stimulated to empty the bowels if necessary. The administration of enema is not recommended.

Perineal and pubic shaving is not performed routinely.

The parturient is released so that she can adopt the position that seems most comfortable to her. When lying down, left lateral recumbency is preferable. Walking is allowed in the initial dilation and with an intact water bag. The parturient at this stage of labour should be encouraged to move, walking or exercising on the physiotherapy ball [3].

The presence of a companion chosen by the patient is allowed during labour and delivery [4]. On admission, in patients who did not undergo prenatal care or who were not undergoing obstetric ultrasound (US) during pregnancy, US is performed primarily with the aim of screening for major foetal malformations that have not been clinically detected.

It is essential to properly fill out the form of the partograph or WHO labour care guide, a simple and efficient graphic way of monitoring the work of childbirth. Its use facilitates the medical supervision of parturients and encourages partnership with obstetricians.

The concept that the average cervicodilation in primiparous women is approximately 1 cm per hour and, in multiparous women, it can reach 1.5 cm is unreliable to assess unfavourable evolution of labour. Therefore, several studies have shown that the partograph alert line cannot identify risk situations that can result in complications during childbirth.

In 2020, the WHO launched the Labour Care Guide to help health professionals use a more reliable instrument where they can record the main parameters of labour in order to find risk factors for adverse events in childbirth. Cervical dilatation, foetal heart rate, caput succedaneum, moulding, status of amniotic fluid, foetal descent, maternal temperature, blood pressure and urinary output should be recorded on the graph (**Figure 1**) [5]. The partograph should start from a cervical dilatation of 5 cm (active first stage of labour).

The digital vaginal examination must be repeated every 4 hours, depending on the stage of evolution, always checking, in addition to cervical conditions, as much information as possible: presentation, position and variety of position; height of the presentation; presence of plastic phenomena; and appearance of the liquid amniotic when the bag is ruptured.

Uterine dynamics should be periodic (every hour), correcting functional dystocia with appropriate manoeuvres and interventions if necessary. Surveillance of foetal

**WHO LABOUR CARE GUIDE**

**Section 1** → Name \_\_\_\_\_ Parity \_\_\_\_\_ Labour onset \_\_\_\_\_ Active labour diagnosis [Date \_\_\_\_\_]  
 Ruptured membranes [Date \_\_\_\_\_ Time \_\_\_\_\_] Risk factors \_\_\_\_\_

**Alert column** → Time \_\_\_\_\_ Hours \_\_\_\_\_  
 ALERT ← ACTIVE FIRST STAGE → SECOND STAGE →

**Section 2** → **SUPPORTIVE CARE**

Companion	N																			
Pain relief	N																			
Oral fluid	N																			
Posture	SP																			

**Section 3** → **BABY**

Baseline FHR	<110, ≥160																			
FHR deceleration	L																			
Amniotic fluid	M+++ , B																			
Fetal position	P, T																			
Caput	+++																			
Moulding	+++																			

**Section 4** → **WOMAN**

Pulse	<60, ≥120																			
Systolic BP	<80, ≥140																			
Diastolic BP	≥90																			
Temperature °C	<35.0, ≥37.5																			
Urine	P++, A++																			

**Section 5** → **LABOUR PROGRESS**

Contractions per 10 min	≥2, >5																			
Duration of contractions	<20, >60																			
Cervix [Plot X]	10																			
	9 ≥ 2h																			
	8 ≥ 2.5h																			
	7 ≥ 3h																			
	6 ≥ 5h																			
	5 ≥ 6h																			
Descent [Plot O]	5																			
	4																			
	3																			
	2																			
	1																			
	0																			

**Section 6** → **MEDICATION**

Oxytocin (U/L, drops/min)																				
Medicine																				
IV fluids																				

**Section 7** → **SHARED DECISION-MAKING**

ASSESSMENT																				
PLAN																				

INITIALS \_\_\_\_\_

INSTRUCTIONS: CIRCLE ANY OBSERVATION MEETING THE CRITERIA IN THE 'ALERT' COLUMN, ALERT THE SENIOR MIDWIFE OR DOCTOR AND RECORD THE ASSESSMENT AND ACTION TAKEN IF LABOUR EXTENDS BEYOND 12H. PLEASE CONTINUE ON A NEW LABOUR CARE GUIDE.  
 Abbreviations: Y – Yes, N – No, D – Declined, U – Unknown, SP – Supine, MO – Mobile, E – Early, L – Late, V – Variable, I – Intact, C – Clear, M – Meconium, B – Blood, A – Anterior, P – Posterior, T – Transverse, P+ – Protein, A+ – Acetone

**Figure 1.**  
 WHO labour care guide [5].

well-being can be carried out intermittently in cases without pathologies, every 15–30 minutes by Doppler sonar. Often foetal heart rate should be assessed before, during and after uterine contraction for one or more minutes.

Cardiotocography should be used when there are changes during intermittent clinical auscultation of the foetal heart rate [6].

All interventions must be clearly described in the patient’s medical record.

Pain relief during labour can be done by pharmacological or non-pharmacological measures. If the environment is favourable and there is a good interaction between the parturient and the care team, the focus on pain may be different. Initial pain relief measures are generally non-pharmacological. Among them we highlight: bath or hot

compresses, massages in the lumbar region and relaxing breathing [7]. Several studies show that these measures are effective and the woman has a more positive experience related to childbirth. Among the pharmacological measures, epidural analgesia is the most used and best resolves pain. The use of opioids is a therapeutic alternative also used; however, it has side effects such as nausea, vomiting, drowsiness and even respiratory depression in the newborn [8].

Routine amniotomy is not recommended. If it is necessary to perform the amniotomy it should be done, with dilatation from 6 to 8 cm and fixed head, right after a contraction, in the most anterior portion possible, promoting slow flow of amniotic fluid and attention to its characteristics.

At the beginning of the expulsive period (complete cervicodilation), the parturient should be taken to the delivery room. Ideally, keep it in practically sitting position or, at least, with the trunk well raised.

Low foetal presentation, compressing the rectum and the perineum, determining the moment to perform the pulls, simultaneously with the contractions.

The main complication of the first stage is the cessation of labour. The diagnosis is made when the parturient is at least 6 cm dilated, has ruptured membranes and does not present any cervical changes due to at least 4 hours of adequate contractions or at least 6 hours of inadequate contractions with use of oxytocin to try to obtain adequate contractions [9].

### **3. Second stage of labour**

The second stage of labour comprises the period between full cervical dilatation and the birth of the newborn. In this phase, the parturient performs involuntary pulls due to the uterine contractions of the expulsive period.

At this stage, the duration is variable. In primiparous women, this period can last up to 3 hours and in those from the second pregnancy onwards, the duration does not exceed 2 hours.

Maternity should be a welcoming environment, respecting ethical principles during childbirth care.

Auscultation of foetal heart rate with Doppler sonar or Pinard stethoscope should be performed every 5 minutes lasting 1 minute in the second stage of labour. This auscultation is performed during and after uterine contraction in order to observe whether there has been an acceleration or deceleration of the foetal heart rate.

The patient is free to choose the position that she feels most comfortable, such as upright, supine or other position [10]. Regardless of the chosen position, the care team must assess foetal well-being. If any deceleration is identified and there is a need to change position, the parturient must be clearly informed of the reason for this change. In the expulsive period of labour, the patient must be supported and encouraged to perform the pushing as she wishes [11].

During the expulsive period, some measures can be used to try to avoid perineal trauma, including perineal massage, the use of warm compresses on the perineum and protection of the perineum in the detachment of the cephalic pole [12].

Episiotomy should not be performed routinely [13].

The Kristeller manoeuvre, which consists of applying pressure to the uterine fundus in an attempt to shorten the expulsive period, is contraindicated due to the risks of maternal and foetal trauma [14].

The prolonged second stage of labour is generally defined as 2–3 hours for primiparous women and 1–2 hours for multiparous women, with the longest interval for women with epidural analgesia during labour [15]. In these situations, the risk of maternal morbidity increases, including postpartum complications such as infection and haemorrhage; it also increases the risk of perinatal morbidity.

#### **4. Third stage of labour**

Physiological delivery occurs approximately 5–10 minutes after foetal expulsion. If it does not occur after this period, it is called delayed delivery (up to 30 minutes) and placental retention (from 30 minutes).

The use of uterotonics in this stage for the prevention of postpartum haemorrhage is recommended. Oxytocin (10 IU IM/IV) is recommended as the first option. If oxytocin is not available or failure to prevent postpartum haemorrhage, the use of ergometrine/methylergometrine or oral misoprostol (600 µg) is recommended [16].

Delayed clamping of the umbilical cord is recommended after the first minute of life, with the aim of improving perinatal outcomes due to the increase in haemoglobin levels at birth, improvement of iron stores in the first months of life, reduction of rates of intraventricular haemorrhage and necrotizing enterocolitis in premature infants [16].

The prolonged third phase of labour increases the risk of postpartum bleeding. Placental complications of the third stage of labour include: retained placenta, adherent placenta and placenta accrete. Due to these complications, it may be necessary to perform the manual removal of the placenta, revision of the uterine cavity, massive bleeding requiring blood transfusion and even hysterectomy [17].

#### **5. Care of the woman after birth**

The period of 1 hour after delivery, also called the fourth period of labour or the Greenberg period, basically consists of careful monitoring by the obstetrician and the nursing team of the patient: in this period, bleeding can occur mainly, responsible for maternal mortality. Therefore, the volume of vaginal bleeding is the main parameter in command of how quickly important decisions must be made. Therefore, the assessment of uterine tone by postpartum abdominal palpation is the main measure for the early diagnosis of uterine atony. In addition, vaginal bleeding, uterine height, blood pressure and heart rate should be evaluated [18].

Breastfeeding in the first hour of life is recommended due to its importance for both the baby and the mother, as it helps with uterine contractions, reducing the risk of bleeding. And, in addition to health issues, breastfeeding strengthens the affective bond between mother and child [18].

#### **6. Conclusions**

The antenatal care is the start of preparation of a safe and quality care during childbirth. For a positive childbirth experience is mandatory a practice based on scientific evidence. Definition of latent and active first stage of labour is important

for assistance. Active first stage starts when regular uterine contractions cause cervical effacement and cervical dilatation from 5 cm until full dilatation. Second stage is a challenge period and the duration varies: in first labour, birth is usually completed within 3 hours, whereas in subsequent labours, birth is usually completed within 2 hours. The use of uterotonics (oxytocin 10 U IM/IV) in the third stage for the prevention of postpartum haemorrhage is recommended.

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### **Author details**

Julio Elito Junior\* and Jorge Francisco Kuhn dos Santos  
Federal University of São Paulo, São Paulo, Brazil

\*Address all correspondence to: [elitoj jr@hotmail.com](mailto:elitoj jr@hotmail.com)

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