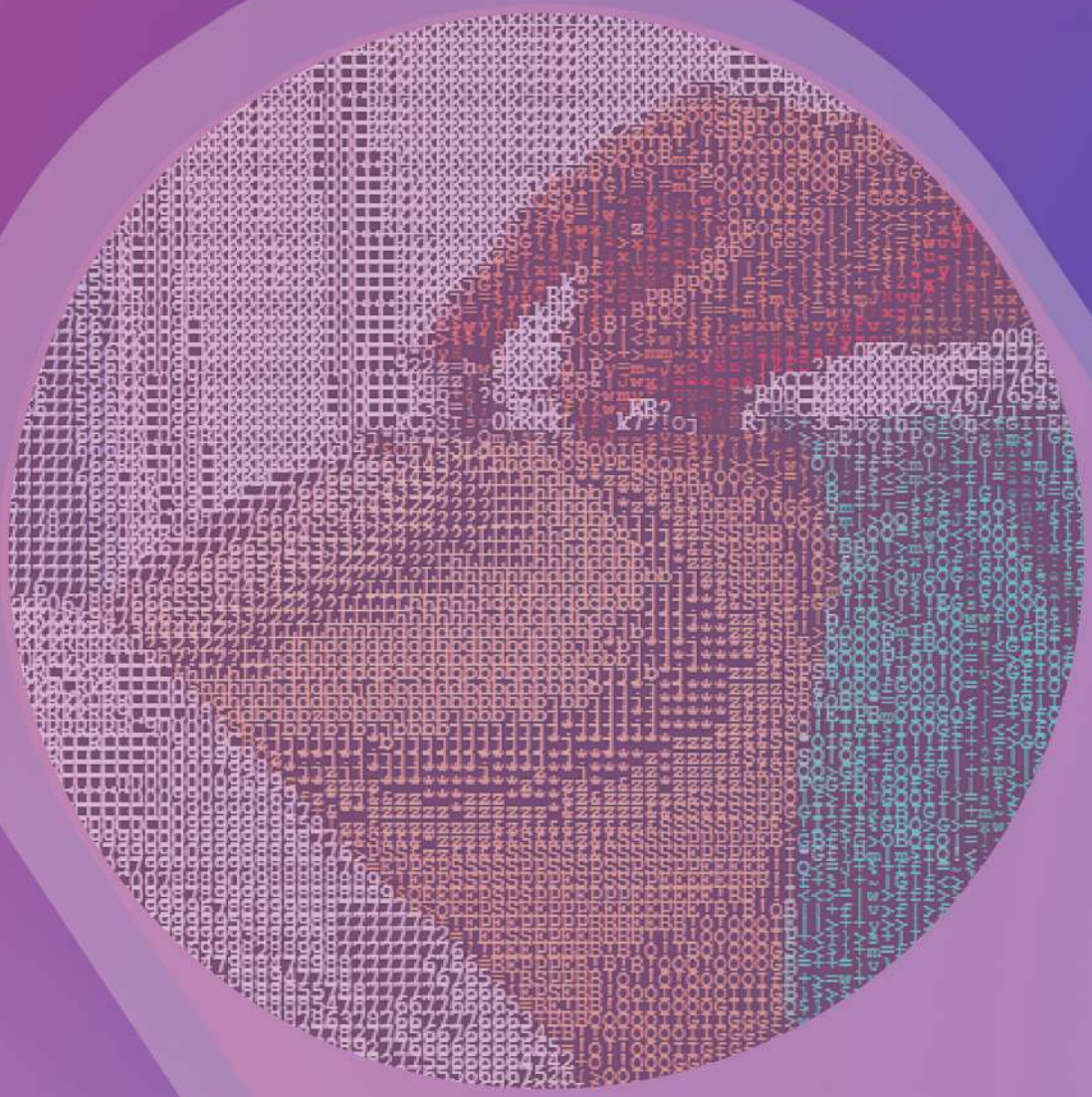
PAIN FREE
PROGRAM
Transformasi Konsep Rawatan
Pelanggan Bebas Kesakitan

PAIN MANAGEMENT IN OBSTETRICS & GYNAECOLOGY



Ministry of Health Malaysia
2023

Pain Management in Obstetrics and Gynaecology Guidelines 2023

This document was developed by the Clinical Audit Unit, Medical Care Quality Section of Medical Development Division, Ministry of Health Malaysia and the National Pain Free Program Committee.

Completed in October 2022

Published in January 2023

A catalogue record of this document is available from the National Library of Malaysia

ISBN: 978-967-2469-54-4

A copy of this document is also available at MOH Portal: *www.moh.gov.my*

FOREWORD

First and foremost, I would like to thank the Editorial Board and it is my pleasure to write the foreword for the Pain Management in Obstetrics and Gynaecology Guideline.

The purpose of these guideline is to enhance the quality of pain management for Obstetrics and gynaecology patients, improve patient safety by reducing the incidence and severity of pain-related complications, and increase patient satisfaction.

The publication of this Pain Management in Obstetrics and Gynaecology Guideline will become an important reference for our health care providers. My hope this will become a useful tool to aid clinicians in the safe and effective treatment of pain in Obstetrics and Gynaecology patients. Commitment and dedication of healthcare providers are essential in ensuring woman have access to the safest, most effective pain relief possible during any phases of their illness.

I sincerely hope that we will continue to provide the best and up to date guidelines for our clinicians to ensure the best quality of care is delivered to our Obstetrics and Gynaecology patients especially on pain management.

Dato' Dr Asmayani Khalib
Deputy Director General of Health (Medical)
Ministry of Health Malaysia
January 2023

PREFACE

The Pain Free Program (PFP) initiative was launched by the Minister of Health in 2008, which includes Pain as 5th Vital Sign (P5VS) and Pain Free Hospital (PFH). Pain as the 5th Vital Sign (P5VS) is implemented for all health care facilities. Whereas Pain Free Hospital Certification is for hospitals with specialists. The publication of this Pain Management in Obstetrics and Gynaecology Guideline focuses on a more holistic approach to pain management of Obstetrics and Gynaecology patients during labour, normal vaginal delivery, operative delivery, postpartum care and in minor gynaecological procedures.

The intention of this guideline is to improve the understanding of healthcare providers regarding pain in Obstetrics and Gynaecology. This guideline also provides methods to recognize and how to assess the level of pain effectively using pain assessment tools and appropriate intervention in pain management. Adequate assessment, counselling and patients' involvement in deciding their pain management will ensure improvement in patient's satisfaction. I hope the launch of this guideline can act as a guide for clinicians, nurses and assistant medical officers to help sustain, improve the quality of care and indirectly reduce morbidity and enhance quality of life of patients in Obstetrics and Gynaecology. Lastly, I would like to thank my Pain Free Program Committees and contributors for their support and patience throughout the process of producing this Guideline.

Dato' Dr Mohd Rushdan bin Md Noor
Senior Consultant Obstetrics and Gynaecology
National Head of Service (Obstetrics and Gynaecology)
Ministry of Health Malaysia
January 2023

Contributors:

Dr Hamidah Omar
Datin Dr Usha Rajah
Dr Aminuddin Ahmad
Dr Mohd Rohisham Zainal Abidin
Dr Noor Haliza Yusoff
Dr Nor Hidayah Yayanto
Dr Norsollehin Adnan
Dr Sharifah Samsiah S Harin
Dr Thohiroh Abdul Razak
Puan Hatifah Che Hussin
Puan Lelah Md Dayan
Puan Neani Surayani Hasimim

Advisor:

Dr Mohd Azman Yacob

Secretariat:

Dr Nor Hayati Ibrahim
Dr Faizah Muhamad Zin
Dr Puteri Fajariah Megat Mohd Ghazali
Dr Zawaniah Brukan Ali
Dr Ahmad Hariz Mohamad
Dr Anith Shazwani Adnan
Dr Herbert Leslie
Dr Lavanya Gunasakaran
Dr Muhammad Izmeer Apili
Dr Nur Mastura Aliyasaa'

TABLE OF CONTENTS

1. INTRODUCTION

Improving the quality of care around the time of birth has been identified as the most impactful strategy for reducing stillbirths, maternal and newborn deaths.

Over the last two decades, women have been encouraged to give birth in health care facilities to ensure access to skilled health care professionals and timely referral should the need for additional care arises. However, accessing labour and childbirth care in health care facilities may not guarantee good quality care. Disrespectful and undignified care is prevalent in many facility settings globally, particularly for underprivileged populations, and this not only violates their human rights but is also a significant barrier to accessing intrapartum care services (WHO).

Uterine contractions are a desired effect of labour process. Labour and delivery cause moderate to severe pain in most parturients, and alleviation of pain and suffering is one of the fundamental principles guiding medical practice including management of labour. The pathophysiological changes in response to poorly controlled pain may result in harm to both the mother and fetus.

The provision of optimal care to the parturient requires an appreciation of the multidimensional nature of childbirth. It is essential for care provider to understand the mechanisms of pain transmission during labour and delivery, as well as other factors that may influence the intensity, duration and quality of pain.

All women in labour should be given attention to their pain. Rational pain management will involve proper application of non-pharmacological and pharmacological interventions. If women requesting pain relief are offered a choice of non-pharmacological (including traditional and cultural preferences) and pharmacological options, it might help to address inequalities in intrapartum care. Women requesting pain relief should be informed of the effects (desirable and undesirable) of the respective pharmacological options and be empowered to participate in the decision-making process.

2. LABOUR PAIN CLIENT CHARTER

I. The health care personnel will strive to provide you with a better labour experience.
II. The health care personnel will give prompt attention to your labour pain.
III. The health care personnel will monitor your labour pain throughout your stay.
IV. The management of your labour pain will be individually tailored using the appropriate intervention.
V. You have the right to be informed regarding options in managing your labour pain

3. OBJECTIVES OF GUIDELINE

I. To improve the understanding of labour pain among health care providers.
II. To recognise and assess patients' pain level effectively using the pain assessment tools.
III. To provide appropriate and safe interventions in labour pain management.
IV. To ensure adequate assessment, counselling and patients' involvement in deciding their pain management.
V. To optimize the role of companions in providing support to women in labour.
VI. To improve patients' satisfaction during their labour process.

4. BENEFITS OF IMPLEMENTING LABOUR PAIN MANAGEMENT

I. Better intrapartum care through closer patient-staff interactions and communications.
II. Decreases anxiety and stress to women in labour and hence reduces possibility of intrapartum fetal/neonatal risks from poorly managed labour pain.
III. Better monitoring of labour and reduces the incidence of inappropriate suboptimal conduct of delivery.

5. MECHANISM OF LABOUR PAIN

5.1. PRINCIPLES OF PAIN RELIEF IN THE OBSTETRIC PARTURIENTS

Pain relief in labour presents several unique problems. These may be best appreciated by comparing several important differences between obstetrical and surgical analgesia and anaesthesia.

a) Fetus - Infant

In obstetrics there are two patients to be given attention to, the mother and fetus. The respiratory centre of the fetus is vulnerable to sedatives and anaesthetic drugs. Hence, when these agents are given to the mother, they rapidly traverse the placenta and may cause neonatal respiratory depression may also affect breastfeeding.

b) Type of analgesia

Although analgesia is optional for spontaneous deliveries, it may relieve unnecessary suffering. Unrelieved pain may negatively impact a woman's ability to care for herself and her infant postpartumly especially the ability to breastfeed. The clinician should consider methods that provide adequate pain relief with the least maternal side effects that will not impact a woman's ability to care for her newborn.

c) Duration

Obstetric analgesia might be required throughout the long duration of the labour process until post-delivery.

d) Effects on Labour

Analgesic techniques used should exert little or no deleterious effect on uterine contractions and voluntary expulsive effort.

5.2. MECHANISMS OF PAIN TRANSMISSION IN THE LABOURING PARTURIENTS

An understanding of the mechanisms of pain transmission during labour and the various factors that may influence the intensity, duration, distribution and quality of pain is essential if optimal labour analgesia is to be provided. Most of these factors vary as labour progresses; thus, the stages of labour are considered separately.

Figure 5.2(1) and 5.2(2) shows the peripheral nociceptive pathways involved in the pain of childbirth.

Figure 5.2(1): Pain pathways in a patient.

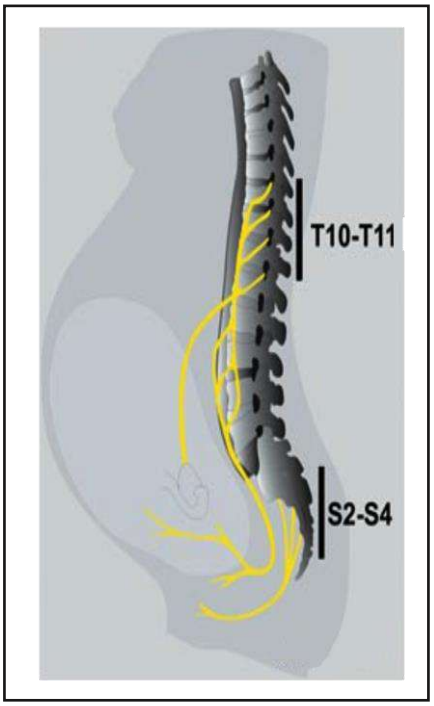
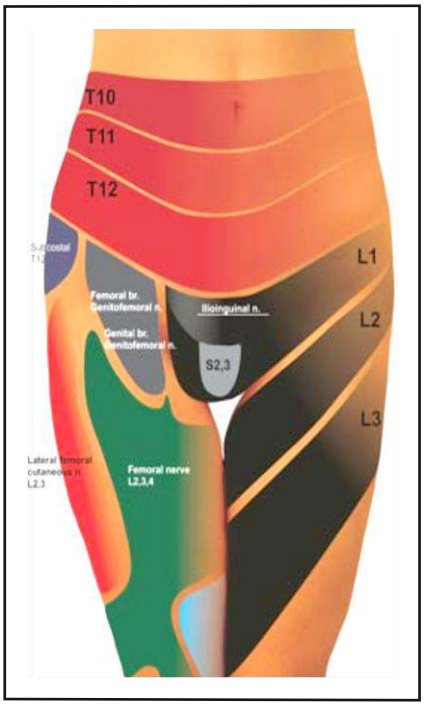


Figure 5.2(2): Dermatomes of the lower abdomen, perineal area, hip, and thighs



5.3. STAGES OF LABOUR PAIN

Labour pain can be divided into the three stages of labour.

a) First stage of labour (from onset of labour until full dilatation of cervix)

Pain during the first stage of labour arises from the uterus and adnexae during contractions. It results from dilatation of the cervix and lower uterine segment and their subsequent mechanical distension, stretching and tearing during contractions.
Several chemical nociceptive mediators contribute to pain including bradykinins, leukotrienes, prostaglandins, serotonins, lactic acids and substance P.

The intensity of pain is related to the strength of the contractions and the pressure generated.

Labour pain is visceral in nature and it is poorly localized, diffuse, dull and vague. It is usually referred as periodic and builds to a peak. The pain fibres are transmitted via T10, T11, T12 and L1 spinal nerves.

b) Second stage of labour (full cervical dilatation until delivery of baby)

The pain arises from the uterine body contractions and distension of the lower uterine segment due to increasing pressure of the fetal presenting part on pelvic structures.

The pain is somatic in nature and is well localized, sharp, definite and intense. The pain is transmitted via the pudendal nerve, a somatic derivative from the S2, S3 and S4 sacral nerve roots.

This second stage of labour pain has been described as the most intense; as a result of the combination of both somatic and the ongoing visceral pain of the uterine contractions.

c) Third stage of labour (after the delivery of the baby until the delivery of the placenta)

The pain associated with the expulsion of the placenta is usually minimal. However, if placenta expulsion is delayed and requiring manual removal, pain relief is required.

5.4. POST-DELIVERY PAIN

Post-delivery pain can be due to;

a) Perineal pain
The pain is normally associated with the presence of episiotomy wound or genital tract trauma and haematoma.

b) Uterine involution

The pain is due to the retraction and shortening of the uterine smooth muscle fibres. The pain usually lasts for 2 to 3 days and may be precipitated by breastfeeding due to oxytocin release.

c) Post-operative (caesarean) pain

The pain arises mainly from the surgical wound which can last up to one week.

d) Back pain

The pain arises mainly due incorrect positioning during labour, prolonged immobilization and poor posture.

5.5. FACTORS THAT MAY INFLUENCE LABOUR PAIN

Recognizing the factors may help us better understand the threshold and response of women towards labour pain.

Table 1: Factors That May Influence Labour Pain

PHYSICAL	PSYCHOLOGICAL & ETHNO-CULTURAL	PROPOSED NEURO-HUMORAL MECHANISM
1. Age and parity 2. Physical condition (prolonged labour, dehydration, starvation) 3. Cephalopelvic disproportion 4. Abnormal fetal presentation 5. Stages of labour 6. Speed and degree of cervical dilatation 7. Frequency of contraction 8. Delivery interventions 9. Maternal position in labour 10. Menstrual history	1. Perceptions and attitude towards labour 2. Fear and anxiety 3. Expectation of pain 4. Prior experience of pain 5. Knowledge of childbirth 6. Support and environment 7. Education level 8. Socioeconomic status 9. Culture and beliefs 10. Barrier in communication	1. Endogenous opioids i.e. endorphins 2. Hormones and mediators 3. Substance P 4. Nociceptin/ORL-1 receptor system 5. Spinal cord noradrenergic-cholinergic system

6. LABOUR PAIN MANAGEMENT

6.1. THE MOTHER FRIENDLY CARE CONCEPT

The concept of “pain free labour” is unique as pain is a desired effect during labour process that will result in pain. It also depends on the women’s threshold and factors surrounding the process. Regardless of the degree of pain and their threshold, measures must be taken to alleviate labour pain. It will improve women’s comfort during labour process and finally allowing a more pleasant experience to aid care for infant and breastfeeding.

Pain management in labour is an important component in Mother Friendly Care under the Baby Friendly Hospital Initiative (BFHI), in Step 4. BFHI is a global programme for infant nutrition which is also being adopted by the Ministry of Health, Malaysia.

The components of

i. Encouraging women to have companions of their choice to provide continuous physical and/or emotional support during labour and birth, if desired.
ii. Allowing women to drink and eat light foods during labour, if desired
iii. Encouraging women to consider the use of non-drugs methods of pain relief unless analgesic and anaesthetic drugs are necessary because of medical condition, respecting the personal preferences of the women.
iv. Encouraging women to walk and move about during labour, if desired, and assume positions of their choice while giving birth, unless a restriction is specifically required for medical indication and the reason is explained to the mother.
v. Care that does not involve invasive procedures such as ruptures of membranes, episiotomies, acceleration or induction of labour, instrumental deliveries, or caesarean sections unless medically indicated and the reason is explained to the mother (unicef/ WHO)

6.2. PAIN ASSESSMENT IN LABOUR

a) Pain including labour pain, is very subjective and the patient’s self-report is the gold standard in the measurement of pain.
b) Women in labour will be counseled regarding the progressive nature of the pain as a guide for their scoring. *(Education on labour and delivery should ideally be given during antenatal period)*
c) MOH Pain score of 0 to 10 is the scale used for the measurement of pain. The MOH pain ruler shall be used as the labour pain assessment tool.
d) Pain score shall be documented in the observation charts including *‘Labour Progress Chart LPC’ and ‘Partogram’.*

6.3. MANAGEMENT OF LABOUR PAIN

6.3.1 Role of Paramedics

Greet patient and ask her about pain. Teach her pain assessment tool and assess the pain score

i) **Pain score < 4:**

- Ask the patient if she is comfortable.
- Counsel regarding the progressive nature of labour pain
- Teach her on non-pharmacological methods ie breathing techniques, walking, positioning, meditations, music etc
- Ask her if she would like to have simple analgesia Paracetamol.
- Tell her to inform if the pain becoming stronger OR if she would like to request for medication.
- Continue nursing observation of vital signs (including pain score), uterine contractions and fetal heart as per protocol or doctor's instruction

ii) **Pain score ≥ 4:**

- Assess uterine contraction, descent of presenting part, fetal heart rate and perform vaginal examination (if strong pain or as indicated according to clinical assessment).
- Teach her non-pharmacological methods, if not been done earlier.
- Inform her about the options of medications and the potential side effects of opioids (except epidural), including maternal drowsiness, nausea and vomiting, neonatal respiratory depression and the possibility of facing difficulty during early breastfeeding.
- Allow the patient to make her decision. Inform doctor if she requests for medication or if there is underlying medical condition eg epilepsy, hypertension.
- If she chooses to continue with non-pharmacological method, inform her that she can always request for pharmacological pain relief at any time, if desired.
- Always advise patient to inform health care personnel when the pain becoming stronger, has the urge to bear down or sensation to defecate.
- Reassess patient after 30-60 mins if she has frequent strong contractions.
- Arrange for transfer to labour room if they are already in the active phase of labour.
- Continue nursing observation of vital signs (including pain), uterine contractions and fetal heart as per protocol or doctor's instruction.

Table 2: Examples of interventions and other non-pharmacological techniques for pain management by health care personnel	
Reassurance	- Explanation about the pain and the stages of labour - Information about the interventions available
Relaxation techniques	- Deep Breathing Technique - Meditation
Topical application	- Hot pack (with strict precaution by trained staff)
Touch therapy	- Soft Tissue Manipulation
Distraction techniques	- Ambulation / movements / deep breathing - Reading - Listening to music / radio / watching TV
Electro-therapeutic	- Transcutaneous electrical nerve stimulation (TENS)

6.3.2 Role of Doctor

Greet patient, assess medical risk factors, ask about pain, teach pain assessment tool and assess pain score.

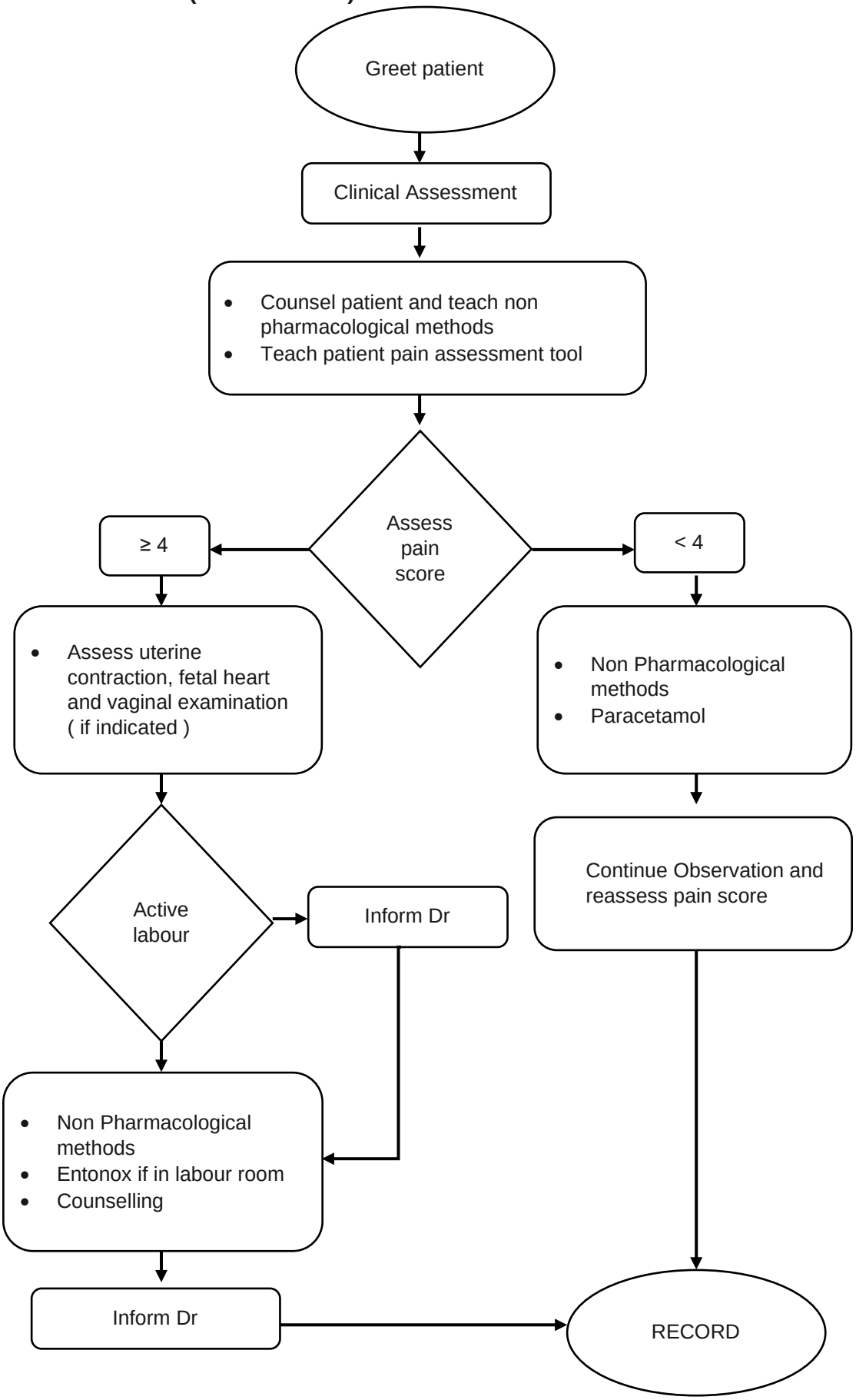
Pain score < 4 :

- Ask the patient if she is comfortable.
- Counsel regarding the progressive nature of labour pain
- Teach her on non-pharmacological methods ie breathing techniques, walking, positioning, meditations, music etc
- Ask her if she would like to have simple analgesia Paracetamol.
- Tell her to inform if the pain becoming stronger OR if she would like to request for medication.
- Continue nursing observation of vital signs (including pain score), uterine contractions and fetal heart as per protocol or doctor's instruction.

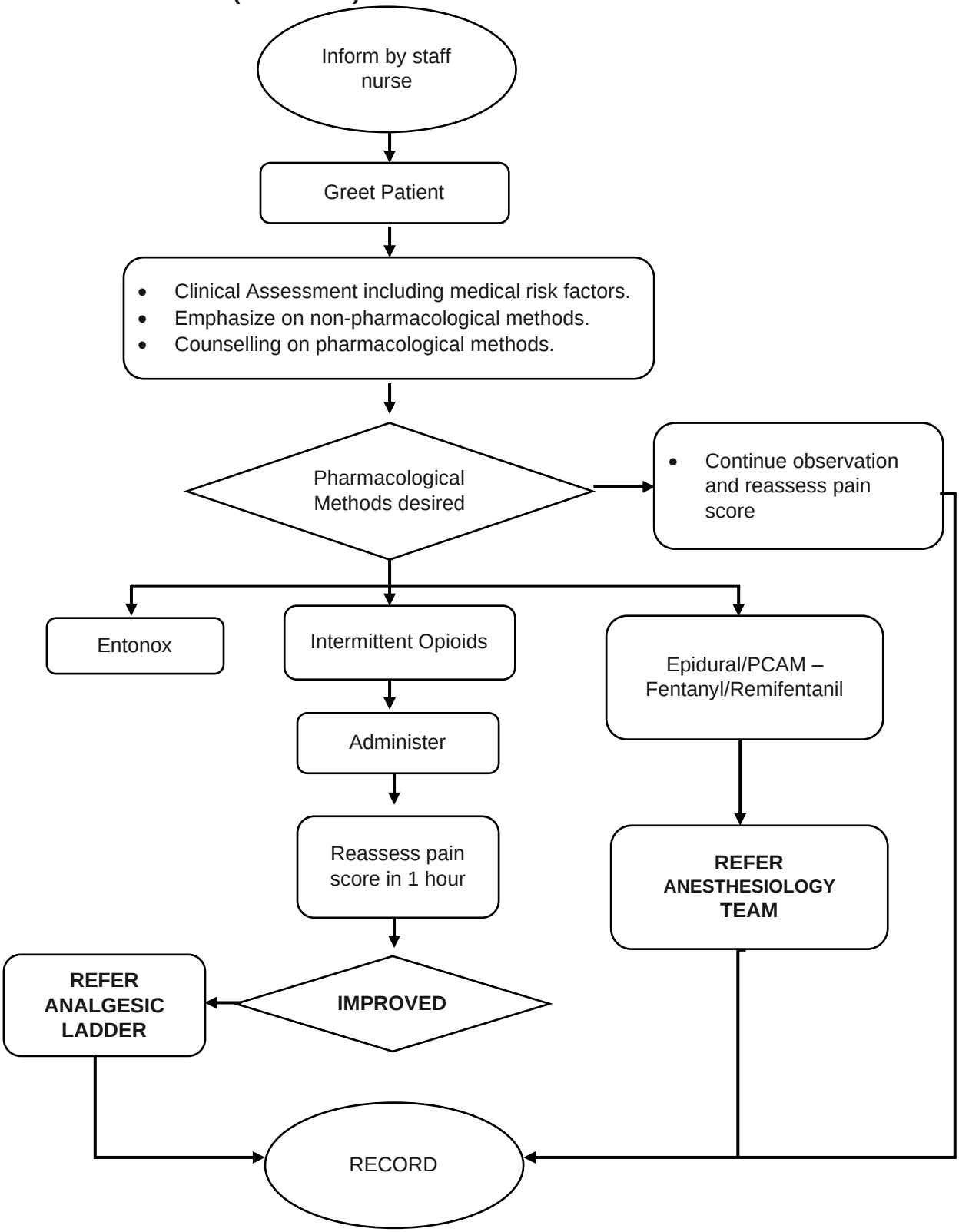
Pain score ≥ 4:

- Do complete assessment on patient, identify medical risk factors
- Assess uterine contraction, fetal heart rate and vaginal examination (if indicated), decide transfer to delivery room.
- Counsel patient regarding options of medications, the benefits potential side effects of opioids including maternal drowsiness, nausea and vomiting, neonatal respiratory depression and the possibility of facing difficulty during early breastfeeding. Allow the patient to make her decision.
- If patient opted for medication, do the necessary prescription or referral to anaesthetist. Reassess 30-60mins after medication administration (by nurse/doctor).
- If she chooses to continue with non-pharmacological method, inform that she can always request for pharmacological pain relief at any time, if desired.
- Advise patient to inform the health care personnel when the pain becoming stronger, has the urge to bear down or sensation to defecate.
- Reassess patient after 30-60mins if she has frequent strong contractions. Arrange for transfer to labour room if they are already in the active phase of labour.

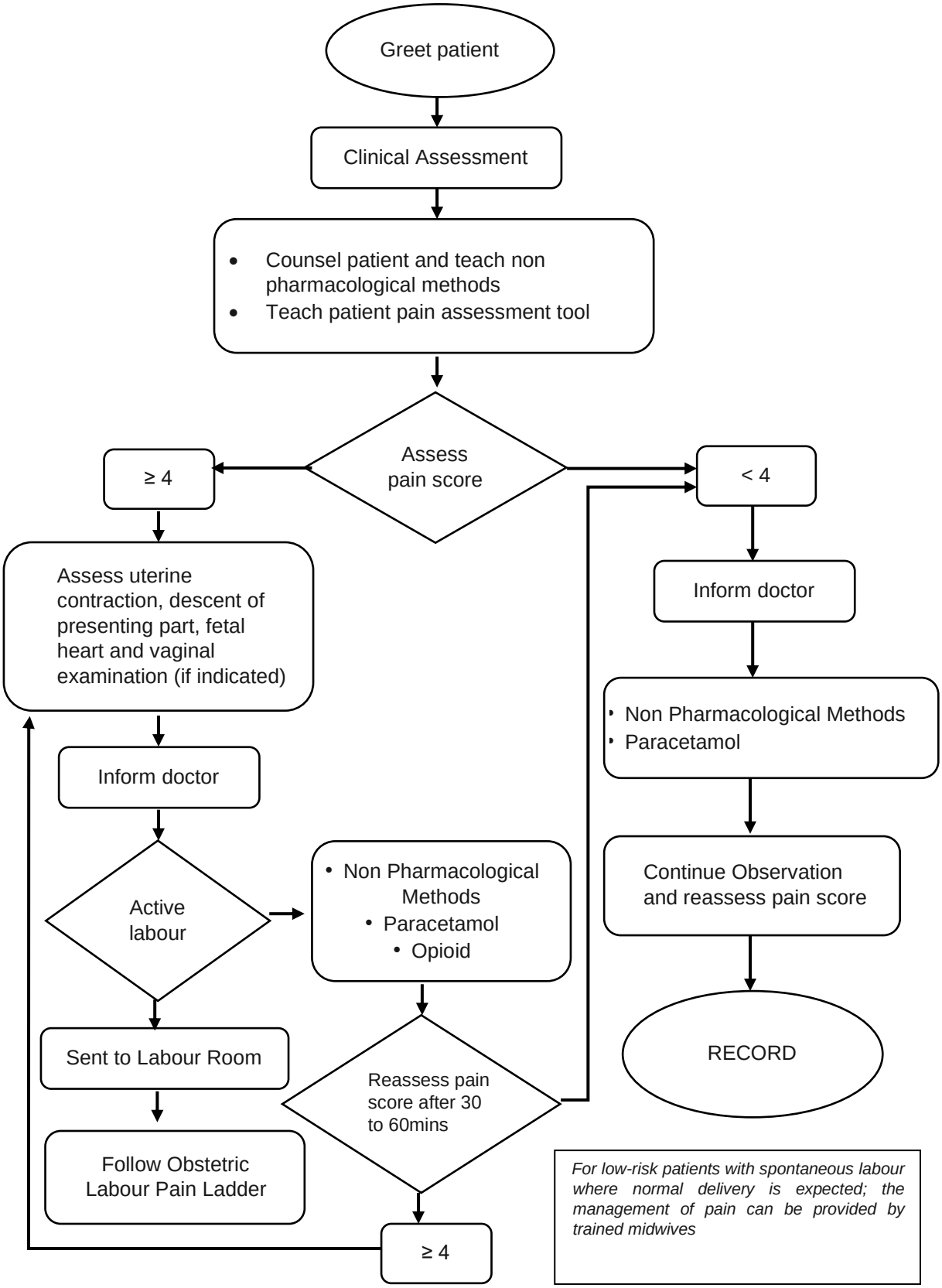
FLOW CHART FOR PAIN MANAGEMENT IN PATIENT IN LABOUR IN HOSPITALS (PARAMEDICS)



FLOW CHART FOR PAIN MANAGEMENT IN PATIENT IN LABOUR IN HOSPITALS (DOCTORS)



FLOW CHART FOR PAIN MANAGEMENT IN PATIENT IN LABOUR IN HOSPITALS (DOCTORS AND PARAMEDICS)



7. MODALITIES OF PAIN MANAGEMENT IN OBSTETRICS

7.1 NON-PHARMACOLOGICAL METHODS

7.1.1 PHYSIOTHERAPY

Introduction

Pregnancy-induced hormonal and physiologic changes increase the risk of musculoskeletal problems during pregnancy which can be associated with pain. Physiotherapy plays an important role in obstetrics during antepartum and postpartum period. Manual techniques and education regarding posture, back care, and modification of daily activities are used to ensure optimal postural alignment which help in minimizing joint stress in pregnant women. Effective treatment for correct muscle activation, strengthening and utilization of the necessary supporting structures; ergonomic training and education can minimize pregnancy-adapted postures. It also helps to prevent and reduce pain or discomfort from pregnancy, delivery and postpartum conditions such as postpartum pelvic pain and symptoms of pelvic joint dysfunction (sacroiliac joint and symphysis pubis).

7.1.1 (A) ANTENATAL EXERCISE

During pregnancy women may experience some musculoskeletal conditions resulting in discomfort and pain. Some of the potential impairments are as below;

- Development of faulty posture
- Upper & lower extremities stress
- Altered circulation, varicose vein, Lower limb edema
- Pelvic floor stress
- Abdominal muscle stretch & diastasis recti
- Inadequate relaxation skills necessary for labour & delivery

Physiotherapist play an important role in: -

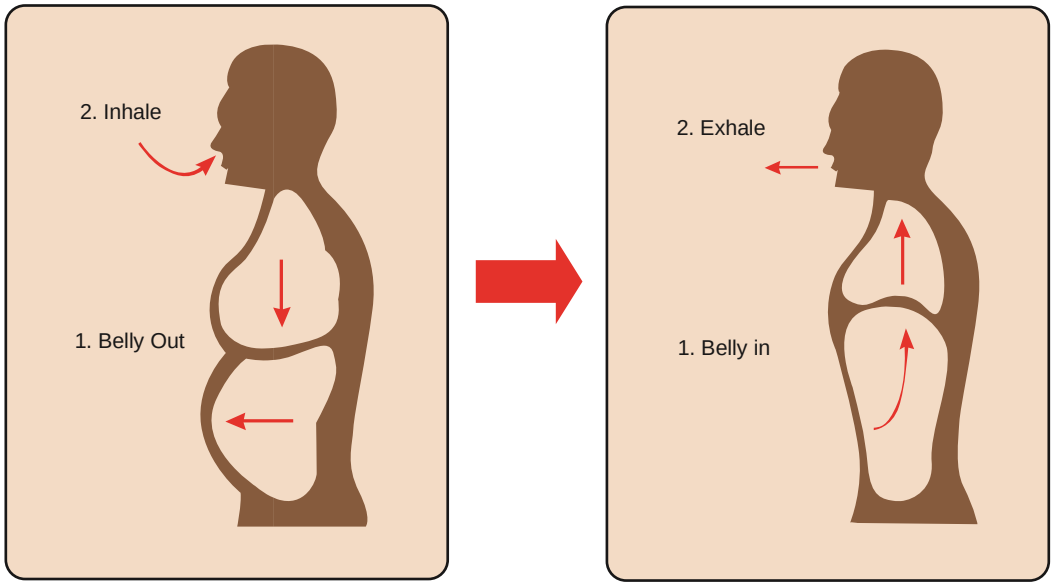
- Preventing/treating of musculoskeletal problems
- Promoting healthy lifestyles
- Educating good ergonomic and posture
- Teaching relaxation techniques
- Teaching breathing techniques in preparation for labour
- Optimising physical fitness

Type of exercise and education

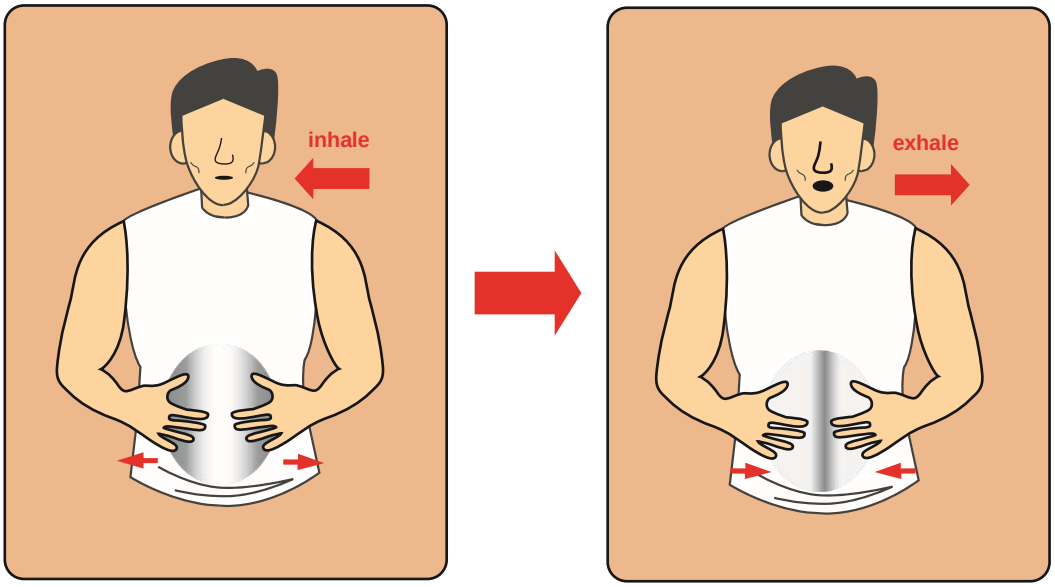
1. **Breathing exercise**

   Breathing exercise is an exercise intended to promote effective and healthy breathing and breath control. Three types of breathing exercise:

a. Diaphragmatic / belly breathing



b. Lower costal breathing



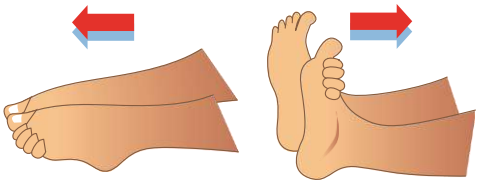
Breath in with expend lateral costal → **Blow and relax**

c. **Apical breathing – part of breathing exercise routine, not advisable for regular breathing due to suboptimal chest expansion.**

Apical expansion

2. **Circulatory exercise**

Ankle exercise helps reduce leg swelling and varicose vein, thus alleviating the problem of leg cramps and also prevention of deep vein thrombosis.



Bend and stretch your ankles vigorously up and down for 30 seconds

Circle both feet 10 times in each direction.

3. **Stretching exercise**

Stretching is a form of physical exercise in which a specific muscle or tendon (or muscle group) is deliberately flexed or stretched in order to improve the muscle's felt elasticity and achieve comfortable muscle tone. The result is a feeling of increased muscle control, flexibility, and range of motion; therefore, reduces pain.

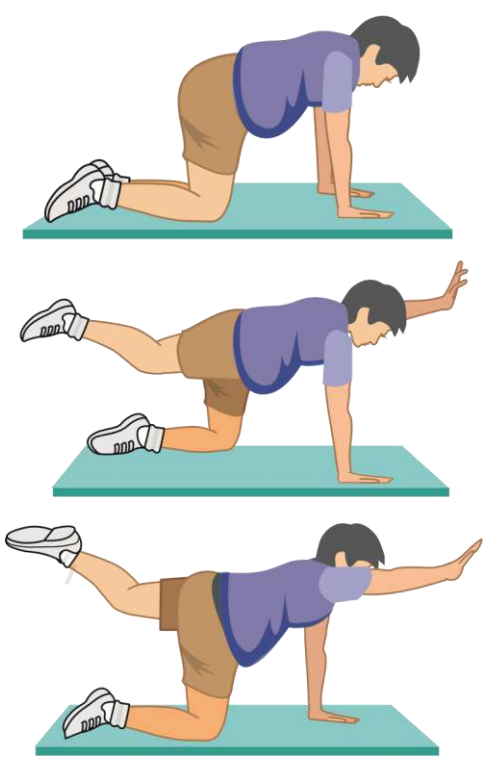
4. **Strengthening exercise**

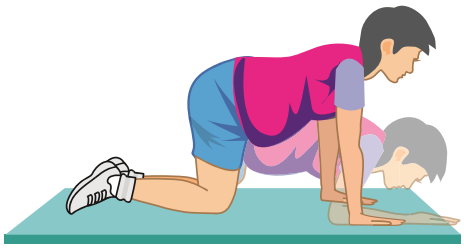
Strengthening exercises are exercises which are designed to increase the strength of specific or groups of muscles. This force and overload of a muscle, encourage growth and muscle strength. Weak muscles can increase the risk of injury to the surrounding joints and soft tissues.

Quadruped arm and leg raise (stretching and strengthening)

Suggestion to do the exercise 10 repetition for 3 times a day.

Exercises to Strengthen Muscles During Pregnancy



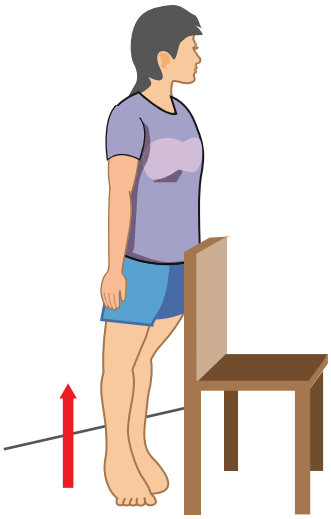


Modified push-up

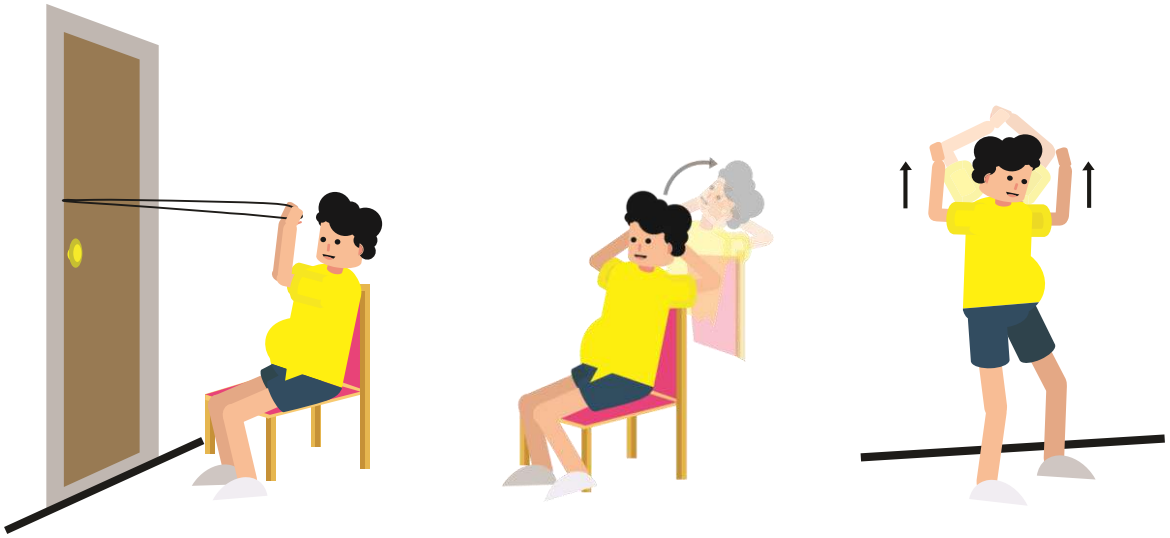
Lunge

Wall squat

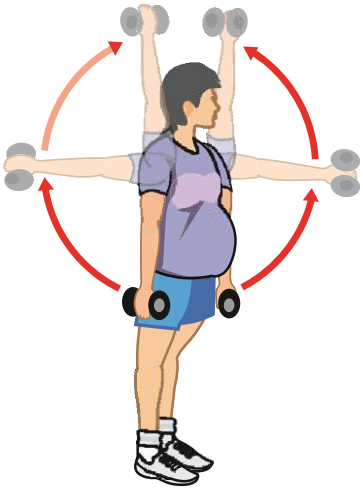
Heel raise



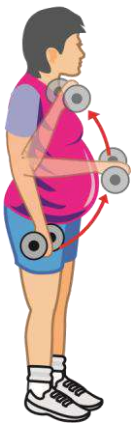
Rowing Exercise (upper back, shoulder, pectoralis major)

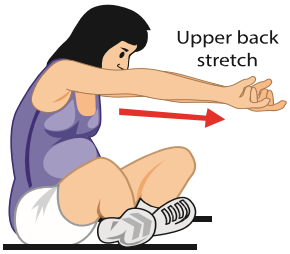


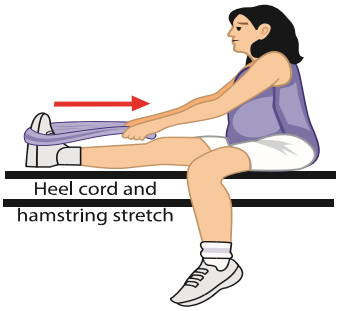
Shoulder abduction

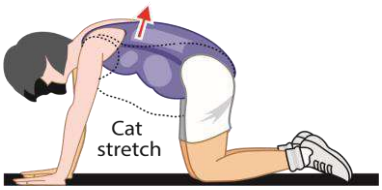


Biceps curl

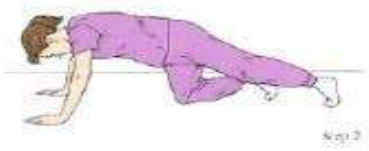


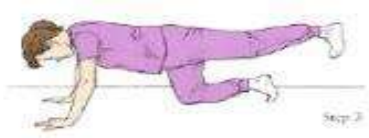






HAMSTRING LIFT

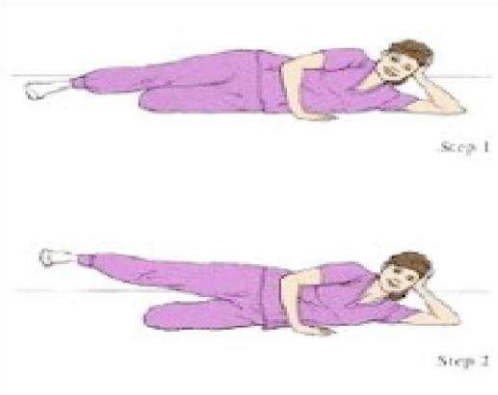




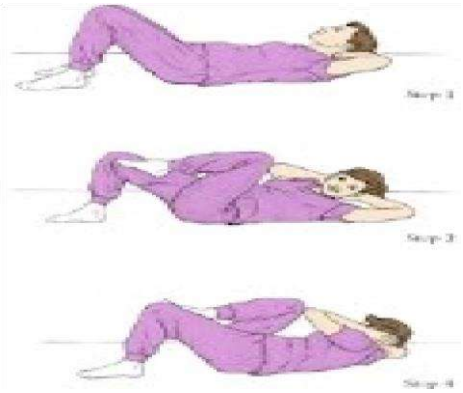
INNER THIGH LIFT

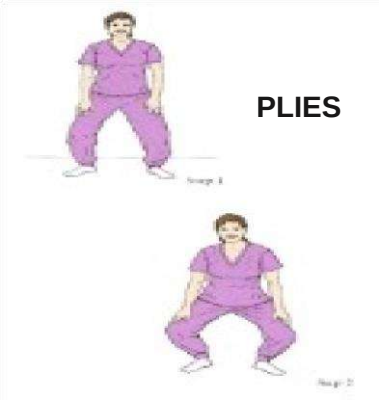
CHEST MUSCLE EXERCISE

OUTER THIGH LIFT



DIAGONAL KNEE AND ARM REACH

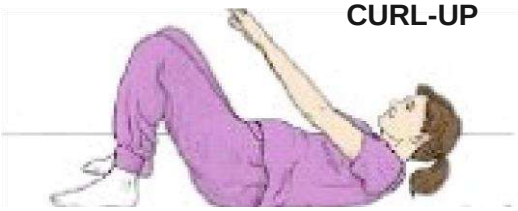




PLIES

SIT-BACK

CURL-UP

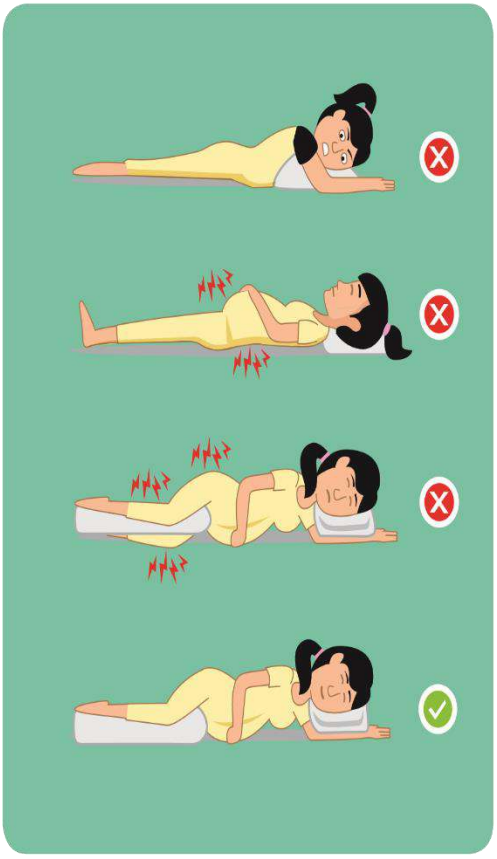


PUSH-AWAY

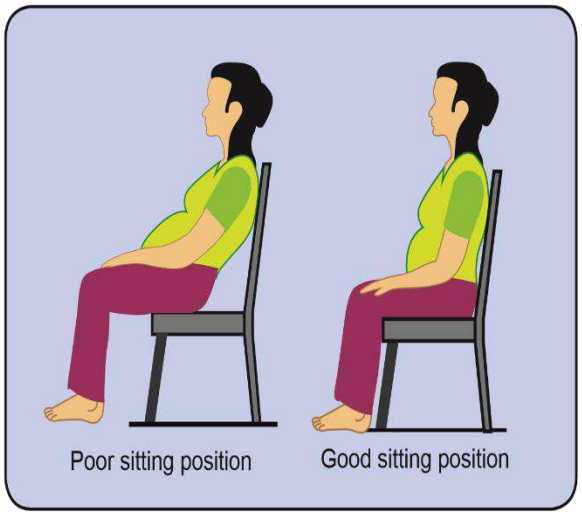
5. Positioning and Posture care

Correct position in daily activities and posture care is important to maintain muscle length, strength and to prevent from discomfort and pain.

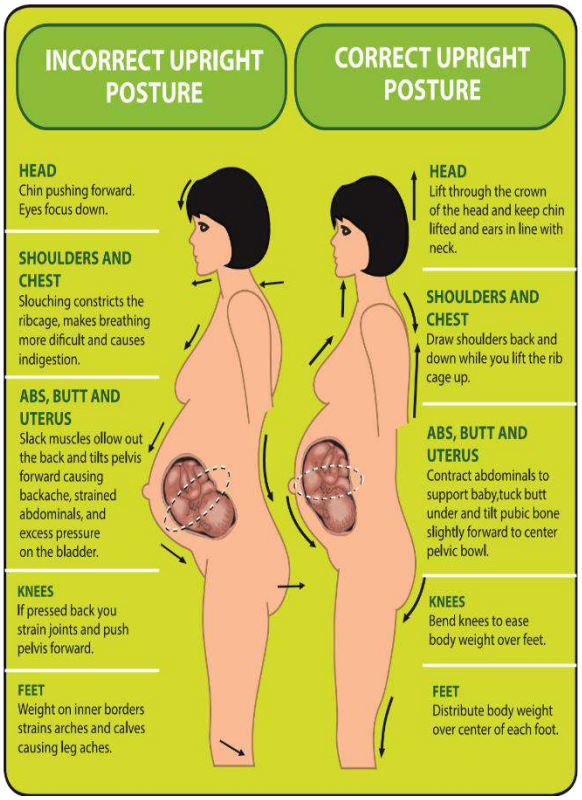
Lying



Sitting



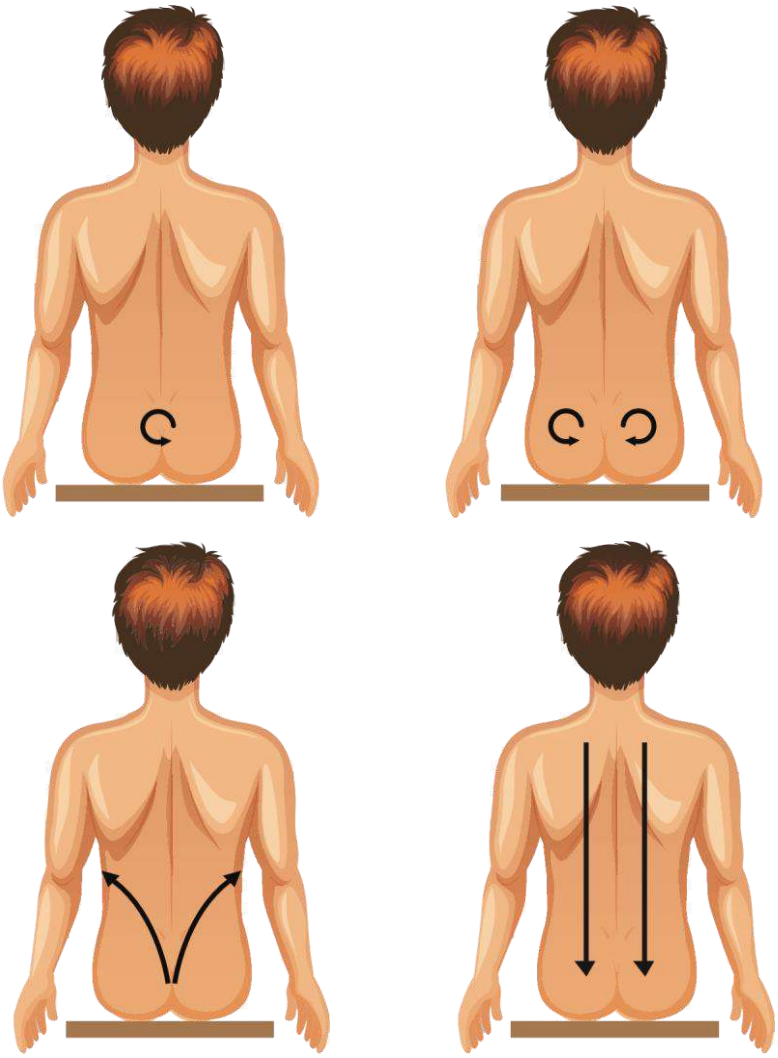
Standing



6. **Soft tissue manipulation**

Soft Tissue Manipulation (STM) is a treatment method during which the soft tissues are pressured or stimulated. Soft tissue manipulation covers a range of treatments which aim to improve the mobility of stiff, immobile soft tissues and those with poor circulation due to inactivity or increased tension.

BACK



7. **Relaxation**

Relaxation is the cessation of work, exertion, or activity which could result into peace, ease, relief from disturbance, mental & emotional tranquillity and healing. It is necessary to restore vigor to the body because most diseases are caused by or made worse by stress.

Most women desire some form of pain relief during labour, and qualitative evidence indicates that relaxation techniques can reduce labour discomfort, relieve pain and enhance the maternal birth experience. (WHO)

8. **Electrotherapy Modalities: Hot Pack, Transcutaneous Electrical Stimulation (TENS)**

Hot Pack :

Hot pack help in increasing the flow of oxygen and nutrients to sensory receptors in the skin, which means that applying heat to the lower back will decrease transmissions of pain signals to the brain and partially relieve the discomfort.

Transcutaneous Electrical Stimulation (TENS):
Electrical stimulation is applied on the skin to relieve pain by interfering with the neural transmission of signals from underlying pain receptors.

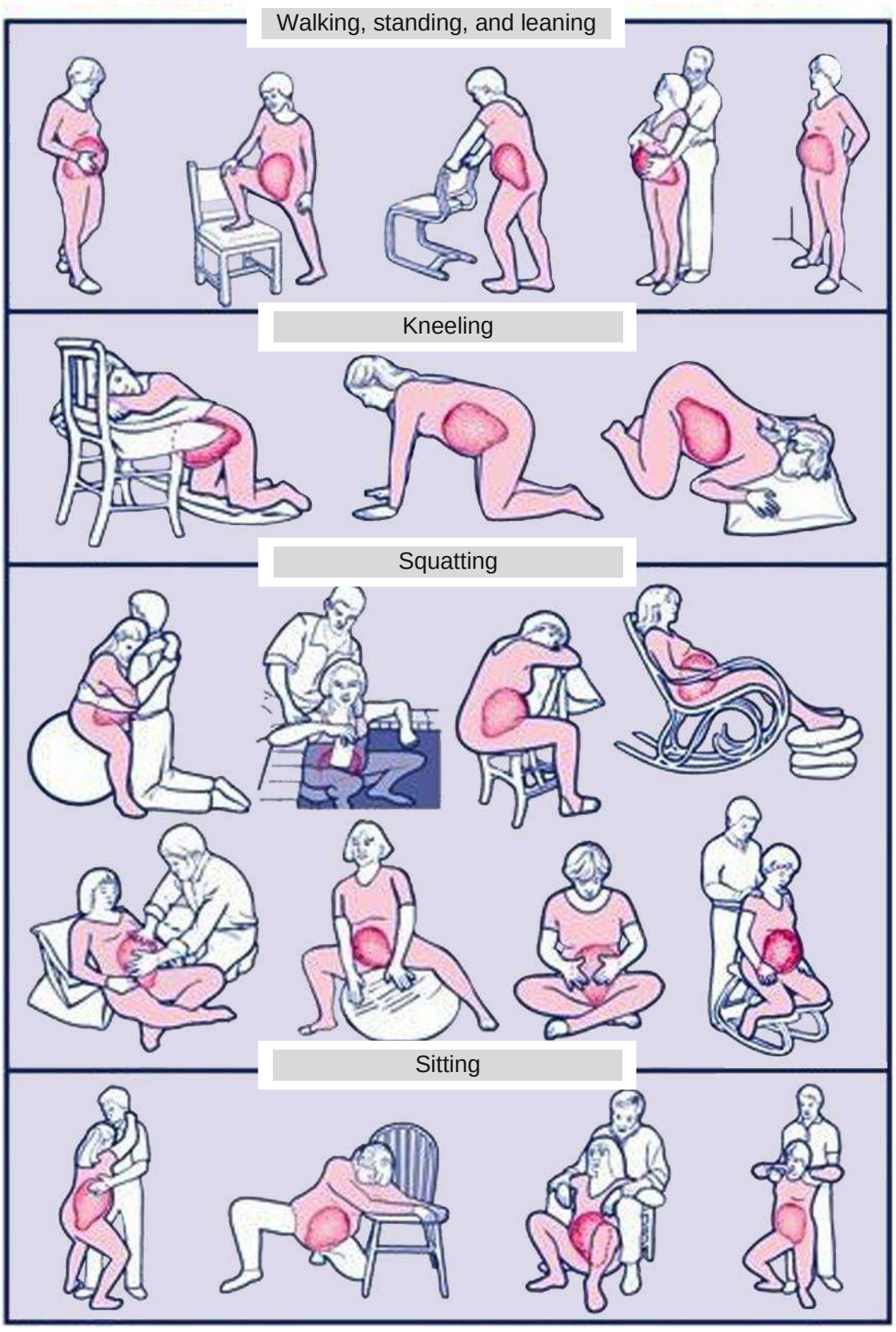
7.1.1 (B) PREPARATION FOR LABOUR

- Relaxation
- Breathing exercise
- Positioning
- Soft tissue manipulation
- Electrotherapy modalities: Transcutaneous Electrical Nerve Stimulation (TENS)

Postnatal exercise:

- Breathing Exercise
- Active exercise
- Circulatory exercise
- Bed Mobility Exercise
- Pelvic Floor Muscle Exercise
- Positioning/posture
- Counter bracing technique of pelvic muscle
- Splinting Cough (For caesarean section)

IN PROGRESS TO LABOUR



7.2 PHARMACOLOGICAL METHODS

i. PARACETAMOL

Introduction

- Simple analgesic used for the relief of mild to moderate pain.
- May be given orally, per rectum or intravenously.
- Also used as part of a multimodal technique along with opioids.

Mechanism of Action

Not completely understood. Various hypotheses suggested

- Prostaglandin inhibition: weak inhibition of peripheral cyclooxygenase activity with apparent selectivity for COX-2.
- Serotoninergic pathway activation: descending spinal serotonergic pathways
- Endocannabinoid enhancement.
- Transient Receptor Potential Vanillin type 1 (TRPV1) activation.

Indications

- For mild to moderate pain relief.
- Also, as a component of multimodal analgesia.

Dose

- Oral/Rectal/IV: 1g 6 hourly to a maximum of 4g per day (Adult >50kg).

Contraindications

- Hypersensitivity to paracetamol or to propacetamol hydrochloride (prodrug of paracetamol) or to any of the excipients (sodium phosphate dibasic dehydrate, hydrochloric acid, sodium hydroxide, cysteine hydrochloride and mannitol).
- Hepatic failure or hepatocellular insufficiency, HELLP syndrome, fatty liver.
- Concomitant administration of other medications which contain paracetamol eg. Panadine, Uphamol.

Precautions

- Hepatocellular insufficiency.
- Severe renal insufficiency (creatinine clearance ≤ 30 mL/min).
- Glucose 6 Phosphate Dehydrogenase (G6PD) deficiency (may lead to haemolytic anaemia).
- Chronic alcoholism.
- Anorexia, bulimia or cachexia, chronic malnutrition (low reserves of hepatic glutathione).
- Severe dehydration and hypovolemia.

ii. PETHIDINE

What is Pethidine

- Synthetic opioid with low oral bioavailability.
- Available in parenteral formulation only.
  - Preparation: Vial Inj 50mg/ml
  - Route: IV/IM, IV preferred because IM shows variable absorption and unpredictable analgesia effect.
  - Dose: 1mg/kg, last dose should be administered estimated 1-3 hours prior to delivery (to prevent neonatal depression),
  - Metabolised in liver to active metabolite (norpethidine), which has a long half life and is neurotoxic (tremors and convulsions). Risk of accumulation is greater in renal impairment (norpethidine cleared by renal).

Indications

- Management of severe acute pain (labelled indication).
  - Uses includes as peri-operative analgesia, ***obstetric labour analgesia,*** procedural analgesia, such as minor surgery, trauma and reduction of fractures.
  - Treatment should be limited to < 48 hours and not exceeding 600mg/24 hours (American Pain Society 2016).

Benefits

- Beneficial as analgesia during labour, providing some pain relief compared to placebo.
- Maternal pain score is better compared to tramadol but inferior to diamorphine and similar with other opioid (2018 Cochrane Review).

Contraindications

- Use of Monoamine oxidase inhibitors (antidepressant) within previous 14 days.
- Bronchial asthma, emphysema or heart failure secondary to chronic lung disease.
- Increased intracranial pressure, head injury or brain tumour.
- Severe hepatic impairment, renal impairment, adrenocortical insufficiency, hypothyroidism.
- Convulsive disorders (including epilepsy), acute alcoholism, delirium tremens.
- Elderly patients.
- Sickle cell disease.

Usage in obstetric patients

- Intermittent bolus technique for labour analgesia, 1mg/kg, last dose should be administered estimated 1-3 hours prior to delivery (to prevent neonatal depression). Usually given together with antiemetic eg Metoclopramide or Promethazine.
- Patient-controlled Analgesia (PCA) for labour analgesia: but unfavourable as it is associated with worse side effects compare to PCA Morphine and fentanyl. o Worse maternal sleepiness, more nausea, higher requests for additional analgesia and higher need for neonatal resuscitation and naloxone (2018 Cochrane Review).

iii. TRAMADOL

What is Tramadol?

- Weak opioid analgesic with noradrenergic and serotonergic properties that may contribute to its analgesic activity.
- Does not produce gastritis, gastric ulcers or effect platelet aggregation.
- Available in oral and parenteral formulation.
  - Preparation: Vial Inj 50mg/ml
  - Route: oral, IV, IM, rectal
  - Dose: 1 mg/kg 4-6 hourly

Indications

- Management of mild to moderate acute pain (labelled indication).
  - Perioperative management of acute pain.
  - Labour analgesia.
  - Uses includes procedural analgesia, such as minor surgery, trauma and reduction of fractures.

Benefits

- Weak opioid with a good analgesia for mild to moderate pain.
- Lesser overall side effect compared to morphine especially less respiratory depression.
- However, associated with more side effect of nausea and vomiting.

Contraindications

- Concurrent use of tricyclic antidepressants, selective serotonin reuptake inhibitor, major tranquilisers and pethidine.
- Use of Monoamine oxidase inhibitors within previous 14 days.
- Convulsive disorders.

Usage in obstetric patients

- Intermittent bolus technique for labor analgesia, as an alternative to pethidine, given as 1mg/kg, estimated 1-3 hours before delivery.
- In comparison to pethidine, tramadol effect is inferior to pethidine although no difference of side effect for neonatal and mother.
  - Tramadol combined with Paracetamol offer similar reduction of pain score with pethidine, with an advantage of fewer maternal side effect.
- PCA Tramadol can be considered for labor analgesia but often require combination with other drug to improve analgesic efficacy.
  - PCA Tramadol-Metoclopramide (20mg/1mg) offer similar analgesia efficacy with PCA Morphine (Pang et al. Pain Medicine 2013; 14: 1426–1434).

iv. NALBUPHINE

What is Nalbuphine?

- Nalbuphine is a Mixed Agonist-Antagonist opioid (partial agonist), agonist at Kappa-receptor and antagonist at μ-receptor of opioid.
- Metabolized in the liver, elimination half-life 3-6 hours.

Indications

- Intermittent technique for labour analgesia.
  - 2.5 to 10mg.
- Treatment of Pruritus associated with intrathecal morphine.
  - Nalbuphine 4mg IV bolus.
- Respiratory depression associated with use of opioid.
  - 10-20mg IV bolus to reverse post-operative respiratory depression.

Benefits

- Similar analgesic potency to morphine, and offer superior analgesia efficacy compared to pentazocine.
- Less overall opioid side effects such as respiratory depression, constipation, nausea and vomiting.
  - Presence of dose-ceiling effect due to the presence of antagonist effect at μ-opioid receptor.
- Low abuse potential compared to Morphine.
  - Abrupt withdrawal produces mild symptoms as compared to morphine withdrawal.
- Does not cause tachycardia, no increase in pulmonary and systemic hypertension, thus making it favourable for patient with heart disease.

Contraindications

- Acute or severe bronchial asthma in an unmonitored setting or in the absence of resuscitative equipment.
- Hypersensitivity to nalbuphine and cross-allergic reactivity is possible with other opioids.
- Increased intracranial pressure, head injury or brain tumour.
- Severe hepatic impairment, renal impairment, adrenocortical insufficiency, hypothyroidism.
- Convulsive disorders, acute alcoholism, delirium tremens.

Usage in obstetric patients

- Intermittent bolus technique for labor analgesia.
  - Preferred choice of opioid as there is a dose-ceiling effect with regard to respiratory depression.
  - IV 2.5-10mg boluses.
  - Use of IM dose of 10mg is similar onset and duration with morphine.

Notes

1. **Morphine for labour pain?**
   Erratic absorption via intramuscular, longer duration with higher risk for respiratory depression both mother and fetus.
2. **Fentanyl is very short acting, why can't it be more frequently used in obstetrics?**
   Fentanyl is 100 times more potent than morphine, had risk of apnea and risk of respiratory depression for both mother and fetus.

v. ENTONOX

What is Entonox?

- A 50:50 mixture of N_2O with oxygen, Entonox®, is used for its analgesic properties to provide short term analgesia for minor surgical procedures and labour pain.
- Nitrous oxide possesses synergistic effect if given with other analgesics and sedatives.

Indications

- Labour pain.
- Paediatric inpatient and outpatient settings: removing sutures, redressing wounds, lumbar puncture and venepuncture.
- During outpatient treatments: laser for diabetic retinopathy, biopsies, sigmoidoscopies, wound dressings, dental procedures, removal of drains and sutures.

Benefits

ENTONOX is a ready-to-use medical gas mixture of 50% nitrous oxide and 50% oxygen that provides rapid, safe and effective short-term pain relief. Key features include:

- Predictable and reliable analgesia.
- Effective pain relief and sedative effect without loss of consciousness.
- Rapid onset and offset, which can lead to savings through reduced treatment time and increased patient turnaround.
- Properties that help to reduce patient anxiety.
- Easy, self-regulated administration.
- Minimal side-effects.

Contraindications

- Pneumothorax, bowel obstruction, air embolism, pulmonary air cysts, intraocular air bubbles, tympanic membrane graft and other conditions where there may be air trapping.
- Decompression sickness or those after a recent underwater dive.
- Maxillofacial injuries, head injury, impaired consciousness or substance intoxication.

- When N2O is used repeatedly:
  - Exclude patients with known vitamin B12 deficiency.
  - Exclude female patients who may be in the early stages of pregnancy.
  - Limit exposure to N2O to the briefest possible time.
  - Monitor for clinical signs and symptoms of neuropathy on a regular basis.

Usage in obstetric patients

- Adequate labour analgesia for many patients but some patients will have incomplete analgesia or no respond at all.
  - Administered using self-administered hand-held mask.
  - Patient should start to inhale as soon as she senses the contraction coming and to maintain throughout contraction phase.
  - Effect will take 45-50 seconds for the onset and lasted for 1 minute.
- Intraoperative supplementation of analgesia during caesarean section if inadequate regional anaesthesia occurs.

vi. EPIDURAL

Pre-requisite

Few things need to be established before putting patient on epidural.

- Pre-anaesthetic evaluation which includes an assessment of patient's medical, surgical and anaesthetic history.
- Criteria for initiation of epidural
  - No fetal distress.
  - Established labour (Patient request alone however is a good indication to provide epidural analgesia).
  - Cervix not fully dilated as epidural analgesia needs time to work.
  - No contraindication such as thrombocytopaenia, coagulopathy, sepsis, hypovolemia, high ICP, severe heart disease with fixed cardiac output and allergic to local anaesthetic drug.
- Partogram findings, to see the progress of labour.
- Consent after information and risks have been discussed.
- Appropriate equipment and supplies for resuscitation should be checked and made immediately available during administration of epidural labour analgesia.
  - Oxygen supply
  - Suction apparatus
  - Self-inflating bag
  - Mask
  - Laryngoscope with different blades
  - ETT sizes 6-7mm
  - Oropharyngeal airways.
  - Anaesthetic drugs: Thiopentone, Suxamethonium.
  - Resuscitation drugs: Atropine, Ephedrine, Phenylephrine, Calcium chloride, Sodium bicarbonate, Naloxone, 20% (lipid emulsion intralipid and Guidelines of usage).
- A good working intravenous line inserted, preferably a size 18G cannula at nondominant hand.
- Preloading and maintenance need not be administered routinely if low dose LA drugs mixture is used.
- Epidural procedure to be performed under aseptic technique. (Antiseptic recommended Solution Chlorhexidine 0.5% in 70% alcohol).
- Use either epidural or combine spinal epidural technique (CSE).
- If rapid analgesia is required, to use combined spinal epidural technique.

- Low dose concentration LA drugs mixture:
  - o 0.05% or 0.0625% Ropivacaine with 2ug/ml fentanyl or
  - o 0.05% Levobupivacaine with 2ug/ml fentanyl.
- Test dose is recommended to ensure no intrathecal injection has occurred:
  - o CSE-no test dose.
  - o Epidural-2mls of 2% lignocaine.
- Not to use high concentrations of local anaesthetic solutions (0.25% or above of ropivacaine or Levobupivacaine).
- For CSE technique, intrathecal drug recommended is undiluted fentanyl 25ug. Then to connect to PCEA machine.

Maintenance

- Once established, to continue epidural analgesia until after completion of the third stage of labour and any necessary perineal repair.
- Few modes can be given for maintenance of epidural analgesia:
  - o Patient-controlled epidural analgesia (PCEA)
  - o Continuous Epidural infusion (CEI) or
  - o Intermittent boluses

PCEA protocol commonly used for (Epidural and CSE) is:

Drugs LA mixture of :
0.05% Ropivacaine + 2ug/ml fentanyl
or
0.05% Levobupivacaine + 2ug/ml fentanyl

- Test dose (epidural)-not given in CSE
  - 2mls 2% Lignocaine
- Loading dose 15mls (not given in CSE)
- PCA Bolus 10mls
- Basal infusion 10ml/hr
- Lockout 10 minutes
- One hour limit not se

Continuous Epidural infusion protocol (CEI):

- Test dose-2 mls of 2% lignocaine.
- Loading 10-15mls of 0.1% Ropivacaine or 0.1% Ropivacaine

Continuous Epidural infusion protocol (CEI):

- Test dose-2 mls of 2% lignocaine.
- Loading 10-15mls of 0.1% Ropivacaine or 0.1% Ropivacaine with fentanyl 50-100ug (2ug/kg).
- Basal Infusion of (0.1% Ropivacaine +2ug/ml fentanyl or 0.1% Levobupivacaine +2ug/ml fentanyl) (10-15mls/h).

- Patient should be cared for in any position comfortable to her. If in supine position ensure she in Left uterine displacement (LUD) to avoid aortocaval compression.

Care and observations during epidural

- Patients must be monitored closely throughout the period of epidural analgesia. It should be performed by trained staff aware of its significance and action required in response to abnormal values. Monitoring should include:
- Maternal blood pressure and pulse rate-every 5 minutes for at least 30 minutes of establishment of analgesia, then every 15 minutes for the next 30 minutes after which hourly monitoring to be continued.
- Continuous fetal heart rate monitoring with intermittent CTG tracing (1-2hourly).
- Respiratory rate.
- Pain score of less than 4 is acceptable.
- Pain score should be documented before and 15 minutes after initiation of epidural analgesia, after which hourly charting to be done.
  - To call anaesthetist if pain score more than 4, at any time (the risk of incomplete, patchy block or epidural catheter dislodged).
- Level of sensory block hourly.
  - (T10 sensory block is adequate for labour analgesia, but if patient is going for LSCS, sensory level at least must be at T5 to ensure adequate epidural anaesthesia).
  - Intermittent boluses
- To document any lower limb weakness.
- Sedation score.
- Temperature (to differentiate between side effect of epidural or sepsis). Patient using PCEA to be told as nearing 2nd stage of labour, perineal pain can be reduced by sitting up and bolus herself.
- For continuous epidural infusion, to sit up and top up with 5mls of 0.2% ropivacaine or 0.1% levobupivacaine with 50ug fentanyl as rescue analgesia.
- Epidural analgesia to be continued until completion of 3rd. stage of labour.

Post Labour Epidural Analgesia

- All patients receiving epidural analgesia must be reviewed post-delivery till 24 hours to ensure the block has receded.
- Some patient might end up with lower caesarean section due to maternal or fetal indications. Thus, assessment of conversion of epidural analgesia to epidural anaesthesia must be done. Any epidural failure or conversion to general anaesthesia must be documented. Post-operative follow up might be longer until patient is fully mobilised.
- To assess for any side effects, complications as well as patient satisfaction.
- Also, to document fetal outcome-Apgar Score.
- For further follow up and closer monitoring should patient require any further management due to complications such post dural puncture headache, urinary retention, neurological deficit and etc.
- For any major complications such as post dural puncture headache (PDPH) (when patient complains of sitting up frontal headache, neck stiffness, visual disturbance, nausea vomiting) and any neurological deficit, patient should be referred to anaesthetic team.
- To complete epidural data checklist for further quality improvement.

I. PCA FENTANYL

- This technique is suitable for patients with IUD, mid-trimester termination of pregnancy or when there are absolute or relative contraindications to labour epidural or regional technique such as, platelet dysfunction (ITP), coagulation disorders, anticoagulant therapy, sepsis, spinal anomaly/ history of spinal trauma/ injury, high intracranial pressure (ICP).
- Fentanyl PCA is not as effective as, but is a useful substitute for regional analgesia.
- No difference in APGAR scores and the need for naloxone in newborn when compared with epidural technique. Nevertheless, paediatricians should be informed and have Naloxone ready if needed.

PCA Fentanyl regime:
Loading dose: 1mcg/kg
PCA bolus: 10mcg
Lock out interval: 5 min

II. PCA REMIFENTANIL

- Similar indication as PCA fentanyl.
- Ultra-short acting opioids, rapidly hydrolysed by plasma and tissues esterase with no accumulation.
- Significant placental transfer but clear evidence for extensive fetal metabolism and redistribution.
- Parturient should be advised to bolus as soon as they sense the contractions starting.
- One-to-one nursing is required.
- Oxygen supplement either via nasal prong or simple mask.
- Close monitoring (half-hourly) of sedation score, RR, SpO2.
- Presence of an in-house anaesthetist is mandatory.

PCA Remifentanil Regime:

Prepare remifentanil as 20 ug/ml concentration (add 1 mg of remifentanil into 50 mls of normal saline)

PCA bolus: 20 ug at a rate not faster than 30s (to avoid chest rigidity)

Lockout interval: 2 minutes
Background infusion: to start at 80 ug/hr (4 ml/hr) and may be titrated to achieve VAS of < 4 (titrate the background, not the bolus to reduce side effect

8. OBSTETRIC PROCEDURES

8.1. EPISIOTOMY / PERINEAL REPAIR

a) Local perineal infiltration with:
   i. Lignocaine 2% (faster onset, shorter duration 30-60minutes) max 3mg/kg **OR**
   ii. In case of more prolonged repair; (i) Bupivacaine 0.5% (slower onset, longer duration 2 to 4 hours) max 2mg/kg, (ii) dilute lignocaine in divided repetitive infiltration

b) Additional to local infiltration, if required - Entonox, opioids, NSAID, oral paracetamol.
c) Topical analgesic spray should not be used on open wound; consider LA gel if necessary.

8.2. MANUAL REMOVAL OF PLACENTA (MRP)

a) Ideally in OT under anaesthesia
b) In case of no OT available,
   i. IM Pethidine 50mg-100mg (max 100mg) plus IV Midazolam in titration 1mg (max 2.5mg) until patient slightly sedated but arousable (sedation score 1-2). *Flumazenil for the antidote for Midazolam, and Naloxone for the antidote for Pethidine should be available; and to be given in titration.
   ii. Or Pethidine (as above) with Entonox.

8.3. INSTRUMENTAL DELIVERY

a) Local perineal infiltration – refer episiotomy/ perineal repair

8.4. POST CAESAREAN SECTION ANALGESIA

a) **Objectives:**
   i. To provide an appropriate management plan for analgesia following a routine caesarean section using a multimodal approach.
   ii. To provide safe and effective post-operative analgesia that is safe for both mother and baby.
   iii. Allow maximal postoperative mobility in mothers in order to facilitate optimal neonatal care.
b) **Options:**
   i. Intrathecal Morphine.
   ii. Epidural Morphine.
   iii. Epidural infusion of LA cocktail (Ropivacaine and Fentanyl).
   iv. Patient Controlled Analgesia (PCA) using Fentanyl.
   v. Regional blocks: Transversus abdominis plane (TAP) block, Quadratus lumborum block.
   vi. Supplemental Analgesia: Paracetamol, NSAIDS (Should be given to all the techniques mentioned above) or Oxycodone (Oxynorm) if Paracetamol and NSAIDS are contraindicated.

A. Intrathecal Morphine

Introduction

• Onset of action is slow, up to 45 minutes and has a prolonged duration of action after a single bolus dose (up to 24 hours of analgesic benefit) following administration.

Indication

• Analgesia following caesarean section in a woman having spinal anaesthesia for caesarean section.

Anaesthetic Problems (dose-dependent side-effects) *

• Pruritus: Incidence of 60%; 1/6 need specific treatment.
• Nausea and vomiting: incidence of 40-50%; severe cyclical form for 10-12 hours in 2-3%.
• Herpes simplex reactivation - clear association after intrathecal Morphine has not been established but avoid Morphine if there is strong history of herpes.

- Late respiratory depression (up to 24 hours after administration) - clinically significant depression or arrest has not been reported in this population within the usual clinical dose range of up to 0.25 mg when intrathecal Morphine is used in isolation, i.e. with no other parenteral or intrathecal opioids.
- Potential for significant opioid side-effects when other parenteral opioids or sedatives administered within the first 24 hours after administration.
- There is increased risk of sedation or respiratory depression for up to 24 hours in the presence of morbid obesity or when additional sedative drugs are used.

Contraindications

- Allergy to Morphine.
- Sensitivity to opioids, e.g. previous severe nausea/vomiting.
- Morbid obesity.
- Obstructive sleep apnoea.
- Previous herpes labialis infection.

Post-operative Management

- Routine post-caesarean section observations - hourly pulse, respiratory rate, blood pressure, pain score for four hours and then 4-hourly thereafter
- No other sedative or parenteral opioids in the first 24 hours.

Management of Side Effects

- Pruritus - Reassurance that this is transient and will subside gradually. Antihistamine is not indicated.
- Nausea and vomiting
  - Antiemetic prophylaxis to be given to all patients in OT after clamping of the umbilical cord.
  - IV Dexamethasone 4 - 8 mg + IV Ondansetron 4 mg or Granisetron 1 mg
  - For treatment of PONV, choose a drug with a different mechanism of action than was used for prophylaxis.
  - Treatment options: Ondansetron 4-8 mg IV or Granisetron 1 mg IV, Metoclopramide 10mg IV, Propofol 10-20 mg IV, Promethazine 6.25 – 12.5 mg IV.
- Inadequate analgesia
  - This is extremely uncommon, particularly if combined with NSAIDs. Parturient are encouraged to take oral analgesics as soon as tolerated.
  - IV patient-controlled analgesia (PCA) is appropriate if there is complete failure of therapy. Hourly RR observation is mandatory if initiated within the first 24 hours following intrathecal morphine.
- Respiratory depression (RR < 8)
  - Call OAS team / anaesthetist.
  - Administer high-flow oxygen via face-mask.
  - Administer Naloxone 0.1mg IV or subcutaneous and titrate to effect up to 0.4mg.

B. Epidural Morphine

Introduction

- Its onset of action is slow, up to 45 minutes and has a prolonged duration of action after a single bolus dose (up to 24 hours of analgesic benefit) following administration.

Indication

- Analgesia following caesarean section in a woman who has an epidural catheter in situ.

Contraindications

- Allergy to Morphine.
- Sensitivity to opioids, e.g. previous severe nausea/vomiting,
- Morbid obesity.
- Obstructive sleep apnoea.
- Previous Herpes Labialis infection.

Post-operative Management

- Routine post-caesarean section observations - hourly pulse, respiratory rate blood pressure, pain score for four hours and then 4-hourly thereafter.
- No other sedative or parenteral opioids in the first 24 hours.

Management of Side Effects

Refer to "management of side effects of intrathecal morphine".

N.B. Alert stickers attached to the patient's medication chart can remind the ward doctors not to prescribe additional opioids.

SPINAL / EPIDURAL MORPHINE ADMINISTERED

DATE: TIME:

No opioids/sedatives to be given within first 24 hours.
If pain relief is inadequate, please inform the APS team. If RR < 8, give oxygen via high-flow mask @ 15L/m. Give naloxone IV 0.1mg stat and titrate to effect up to a maximum of 0.4mg.
Call APS team or ICU MO.

N.B. When neuraxial opiods are contraindicated, epidural cocktail of 0.1% Ropivacaine + Fentanyl 2mcg/ml can be administered during the postoperative period as infusion.

C. Epidural Infusion

- Epidural infusion of low dose local anaesthetic solution (without opioids) can be used for post LSCS analgesia in patients who are morbidly obese or has obstructive sleep apnea.

D. Patient Controlled Analgesia using Fentanyl

- Following GA LSCS or when regional technique is contraindicated.
- Fentanyl commonly used.
- If allergic to Fentanyl, Oxynorm/morphine would be the alternative.
- No opioids/ sedatives should be given while PCA is in progress. If pain relief is inadequate, please inform the OAS team.

E. Regional Blocks (Tranversus Abdominis Plane (TAP) Block / Quadratus Lumborum (QL) Block

- In patients who undergo general anaesthesia or spinal anaesthesia without intrathecal or epidural morphine, TAP/QL blocks can significantly improve postoperative pain and reduce opioid consumption.
- TAP blocks are effective primarily for somatic incisional pain rather than visceral or cramping pain.
- There is no significant analgesic and opioid-sparing benefit of routine TAP block after caesarean delivery in patients who receive intrathecal morphine.

F. Supplemental Analgesia

To be given to all patients unless contraindicated.

i. Paracetamol (PCM)

- 1 gram suppository at the end of surgery.
- Tab PCM 1 gram 6 hourly strictly for 3 days to be written in patient medication chart.
- Contraindication:
  - Allergy to paracetamol.
  - Liver disease (use with caution or in reduced dose).
  - Suppositories are contraindicated in proctitis.

ii. Diclofenac Acid

- 100 mg suppository at the end of surgery.
- Maintenance oral route to be started 18 hours after initial 100mg suppository: Tab Diclofenac 50 mg 8 hourly (with food) strictly for 3 days to be written in patient medication chart.
- Contraindication
- Allergy to aspirin or other NSAIDs.
- History of gastric or duodenal ulcer or gastrointestinal bleeding.
- NSAID induced asthma.
- Pre-eclampsia/HELLP Syndrome.
- Coagulation disorder.
- Major haemorrhage (until review the following day).
- Hypovolaemia.
- Renal impairment.
- Suppositories are contraindicated in proctitis.

Note:

Paracetamol and Diclofenac may be regarded as a mild-moderate analgesic agent. However, it is still useful as part of the multimodal approach of pain management.

iii. Oxynorm

- Tab Oxycodone (Oxynorm) 5mg qid for 3 days can be used as an alternative if there are contraindications for the use of Diclofenac or Paracetamol.

Other Issues:

- ***Please do not keep the bladder catheter (CBD) and IV drip in-situ merely because OAS techniques are being used. The bladder catheter and IV drip may be discontinued once the obstetric team is satisfied, regardless of OAS techniques. Please leave the IV cannula in-situ and use a stopper.***
- Our aim is to have a pain-free, ambulatory patient. The OAS infusion pumps may be attached to a drip stand, and the patient may walk around, pushing the drip stand. Once the patient is able to tolerate fluids orally, oral analgesia (Paracetamol, NSAIDs) should be given strictly as ordered.
- Epidural Catheter
  - ***If catheter is disconnected from filter, the catheter is to be removed by OAS doctor/nurse immediately.***
  - ***The OAS nurse and doctor are the only personnel allowed to inject drugs or other solutions through the epidural catheter.***

9. MINOR GYNECOLOGICAL PROCEDURES

9.1. MANUAL VACUUM ASPIRATION (MVA) – assess pain score before and during vaginal examination

a) IM Diclofenac Sodium 50/75mg or
b) IM Tramadol 50mg or
c) IM Nalbuphine 10mg or
d) IV PCM 1gm.

9.2. SECONDARY SUTURING WITH LOCAL INFILTRATION

a) Local perineal infiltration with
   I. Lignocaine 2% (faster onset,shorter duration 30-60minutes) max 3mg/kg or
   II. Bupivacaine 0.5% (slower onset,longer duration 2 to 4 hours) max 2mg/kg.
b) Oral NSAIDs
c) Opiods.

9.3. OFFICE COLPOSCOPY / HYSTEROSCOPY

a) Oral NSAIDS / Opioids.
b) IM Diclofenac Sodium 50/75mg; IM Tramadol 50mg; IM Nalbuphine 10mg; IV PCM 1gm.

9.4. WOUND DRESSING

a) Oral NSAIDS / Opioids.
b) IM Diclofenac Sodium 50/75mg; IM Tramadol 50mg/Nalbuphine 10mg/ IV PCM 1gm.

Clinical Characteristics of local Anaesthetic Agents

Agent	Onset	Duration	Maximum Dose	Maximum Dose with Adrenaline
Lignocaine (Lidocaine)	<2min	30-60 min (longer with Adrenaline)	3mg/kg	7mg/kg
Bupivacaine (Marcain)	5-10min	200 min (up to 540 min with adrenaline	2.5mg/kg	3mg/kg
Ropivacaine (Naropine)	5-15min	200 min+	3mg/kg	3mg/kg
No te : doses in the based on the manufactures' package insert.				

10.ANTENATAL CLASS

1. Should incorporate labour pain management (both non-pharmacological and pharmacological methods) in addition to the present antenatal class topics.
2. Physiotherapy should be included as a main component in antenatal class to provide education on proper positioning during pregnancy, muscle strengthening/ tone and reduce muscle fatigue or cramp during pregnancy dan labour/delivery.
3. At present, other topics commonly covered are; changes during pregnancy, stage of labour, breastfeeding and mother friendly care, care of newborn /vaccination, orientation to maternity facility etc.

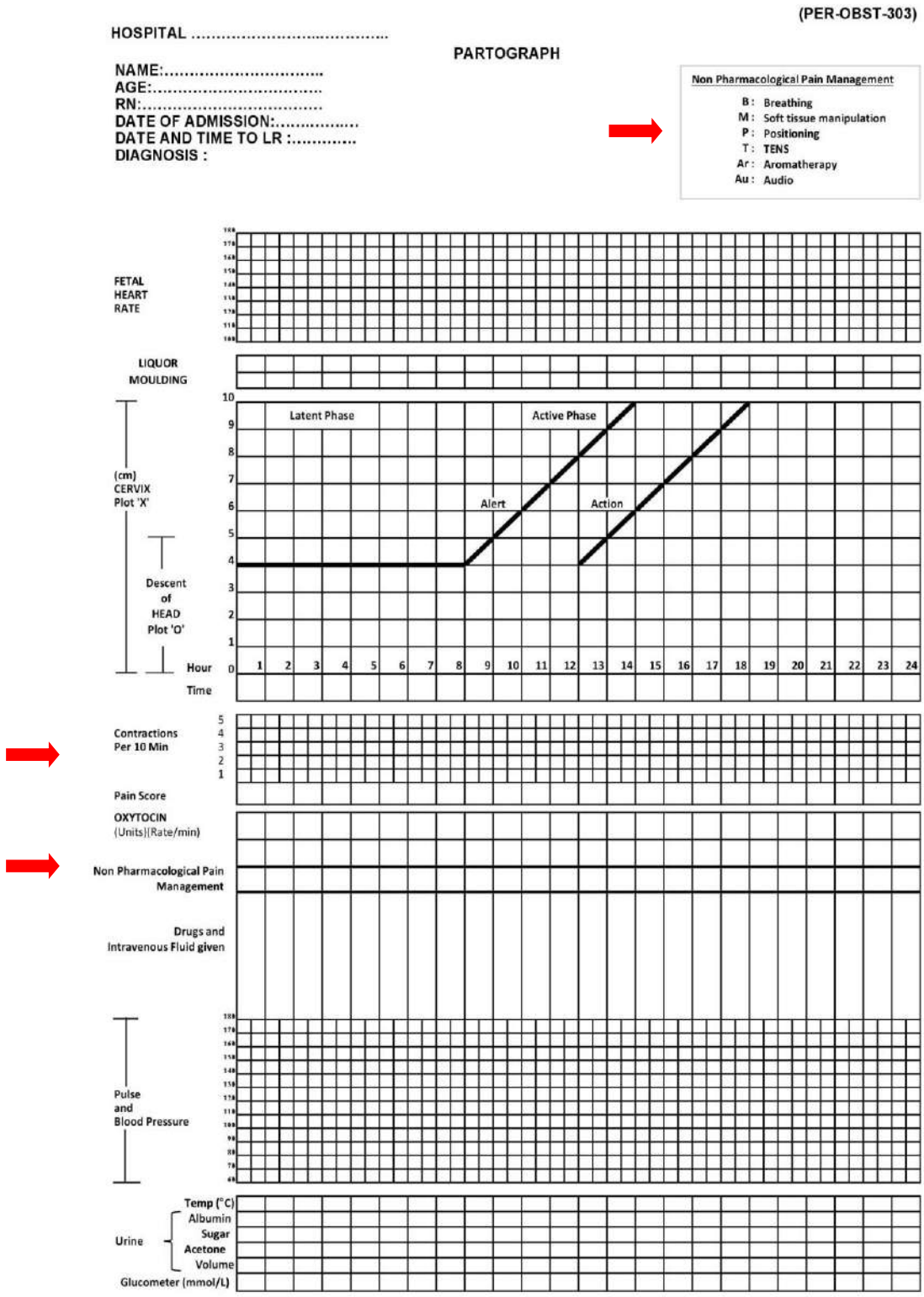
11.REFERENCES

1) Obstetric Anaesthesia and Analgesia service: Policies and guidelines 2014, HKL.
2) Best Practice in the Management of Epidural Analgesia in the Hospital setting. Faculty of Pain Medicine, Royal College of Anaesthetist, November 2010.
3) Epidural analgesia for labor: Current techniques.Local Reg. Anaesth. 2010 Dec: 3: 143-153.
4) NICE Guidelines: Pain Relief in Labour; Updated 6 June 2017
5) Winkler H, Hebeler, F. Investigation of the acetone and lactic acid concentrations in blood during birth and their importance for uterine action. Archiv Gynakol 168: 64-78. 1939 (German)
6) Paterson P, Sheath J Taft P. & Wood C. Maternal and foetal ketone concentrations in plasma and urine. Lancet I 862-865.
7) Scrutton M.J. Eating in Labour A randomised controlled trial assessing the risks and benefits Anaesthesia 1999 54,329-334
8) Kubli M, Scrutton, M O'Sullivan, Seed P Evaluation of 'sports drinks' in labour. Abstracts of free papers presented to the Obstetric Anaesthetists association Winchester UK 11-12 may 2000.
9) Wright P.M.C Allen R.W. Moore J.Gastric emptying during lumbar epidural analgesia in labour: Effect of Fentanyl supplementation. BJA 1992;68: 248-251
10) North Bristol NHS Trust, Guideline for eating and drinking in labour and the early postoperative period. March 2014.
11) Royal Cornwall Hospitals NHS Trust, Feeding in labour. March 2014
12) Women's and Children's Hospital, Adelaide, Diet for Labouring Women in Delivery Suite and High Dependency. March 2007
13) Liu B, O'Sullivan G et al. Does eating during labour influence obstetric outcome? Int Journal Obstetric Anaesthesia.2007; 16(3): S11
14) Porter JS et al. The influence of epidural administration of fentanyl infusions on gastric emptying in labour. Anaesthesia 1997:52:1151-6
15) Zimmerman DL et al. Adding fentanyl 0.0002% to epidural bupivacaine 0.125% does not delay gastric emptying in labouring parturients. Anesth Analg 1996;82:248-51
16) http://pathways.nice.org.uk/pathways/intrapartum-care
17) WHO recommendation on relaxation techniques for pain management during labour; 17 Feb 2018
18) WHO recommendation of opioid analgesia for pain relief during labour; 17 Feb 2018
19) BABY-FRIENDLY HOSPITAL INITIATIVE; Revised Updated and Expanded for Integrated Care. Section 4 (Unicef, WHO - 2009)
20) Pain as The 5th Vital Sign Guideline: 3rd Edition (Sept 2018)

12. APPENDICES

12. APPENDICES

Appendix 12.1: PARTOGRAPH



Appendix 12.2: MINISTRY OF HEALTH PAIN AND FACE SCALE

12.2 (a) MOH Pain Scale

12.2 (b) MOH Face Scale

NOTES: Assessment as in Pain as the Fifth Vital Sign Guidelines.

Appendix 12.3: NURSING OBSERVATIONS CHART

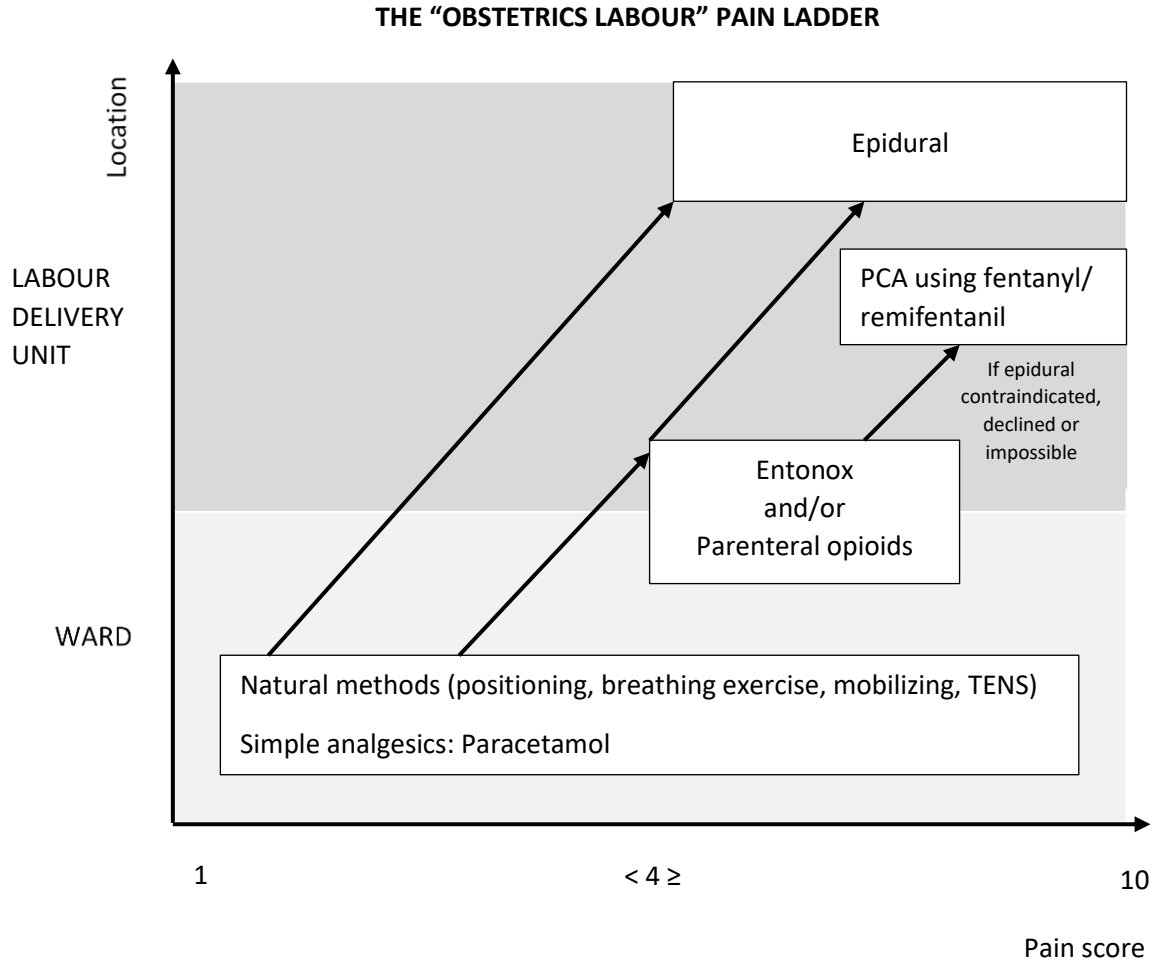
OBSERVATION CHART
OBSTETIC AND GYNAECOLOGY

NAME: **WARD:** **MRN:**

DATE	TIME	B/P	PR	MAP	RR	SPO2	PAIN SCORE		FHR	CONTRACTION	PAD-CHART	REAMRKS	NAME OF STAF
							SCORE	LOCATION					

NOTES: For use in both **ANTENATAL** and **POSNATAL** observation throughout hospital stay.

Appendix 12.4: ANALGESIC LADDER IN OBSTETRICS PATIENT



Appendix 12.5: PAMPHLET

PCEA/PIEB Untuk Pengurangan Kesakitan Semasa Bersalin

- Ubat akan disalurkan ke tiub epidural secara berterusan
- Sekiranya masih terasa sakit, ibu boleh menekan butang setiap 10 minit sehingga rasa selesa
- Ibu disarankan untuk duduk dan menekan butang jika sakit dibahagian bawah bertambah
- Skala kesakitan kurang daripada 4 boleh dianggap baik
- Jika sakit tidak berkurangan, ibu perlu memberitahu jururawat. Tindakan sewajarnya akan diambil

Patient Controlled Analgesia (PCA) Untuk Pengurangan Kesakitan Semasa Bersalin

Ubat Opiod akan diberikan melalui vena menggunakan alat yang boleh dikawal oleh ibu sendiri dengan menekan butang PCA

Indikasi untuk PCA:

- Masalah tulang belakang
- Infeksi kulit dibahagian belakang
- Masalah pembekuan darah
- Mengambil ubat pencair darah
- Kematian bayi dalam kandungan

Risiko Yang Mungkin Berlaku Dengan PCA

Jenis Risiko	Kadar Kekerapan
Loya & Muntah	Kerap
Kegatalan	Kerap
Mengantuk	Kerap
Lemah Pernafasan kepada ibu dan bayi	Jarang

Risiko Yang Mungkin Berlaku Dengan Epidural

Risiko Epidural	Kadar Kekerapan
Kegatalan	Kerap
Kebas kaki	Kerap
Loya & muntah	Kerap
Lemah otot kaki	Jarang (sementara)
Penurunan tekanan darah yang ketara	Jarang
Epidural tidak berkesan	Jarang
Epidural tidak berkesan untuk pembedahan cesarean	Jarang
Demam	Sangat Jarang
Sakit kepala yang teruk	Sangat Jarang
Kecederaan saraf (kebas kaki atau lemah) melebihi >6bulan	Sangat Jarang
Meningitis	Sangat Jarang
Nanah di ruang epidural	Sangat Jarang
Darah beku di ruang epidural	Sangat Jarang

Kaedah Pemberian Ubatan Epidural

- Patient Controlled Epidural Analgesia (PCEA)
- Programmed Intermittent Epidural Bolus (PIEB)
- Continuous Epidural Infusion (CEI)

Untuk maklumat lanjut sila hubungi Klinik Anestesia atau kakitangan bertugas

PAIN FREE HOSPITAL
Transformasi Konsep Rawatan Pelanggan Bebas Kesakitan

BERSALIN DENGAN SELESA

KEMENTERIAN KESIHATAN MALAYSIA

Kami Sedia Membantu

PROSES BERSALIN

- Proses bersalin melibatkan kontraksi (pengecutan) rahim yang menyebabkan kesakitan. Semakin kerap kontraksi rahim, semakin kerap kesakitan yang dialami
- Tahap kesakitan berbeza bagi setiap ibu mengandung.
- Sekiranya ubat digunakan untuk induksi atau memperceapatkan proses bersalin, kontraksi mungkin akan bertambah kuat dan lebih sakit.
- Tahap kesakitan anda akan dinilai dengan menggunakan Skala Kesakitan
- Teknik dan ubatan yang diberikan adalah bertujuan untuk mengurangkan kesakitan kepada kurang daripada 4

SKALA KESAKITAN *

Kaedah untuk mengurangkan kesakitan semasa bersalin

- Adalah agak sukar untuk menjangka kaedah terbaik untuk mengawal kesakitan anda.
- Bernafas dengan tenang mungkin boleh mengurangkan kesakitan.
- Berikut adalah kaedah untuk mengurangkan kesakitan semasa bersalin
- Tidak semua kaedah tersebut boleh didapati di hospital anda. Sila berbincang dengan kakitangan kami mengenai kaedah yang sesuai dan terbaik untuk anda.

KAEDAH UNTUK MENGURANGKAN KESAKITAN SEMASA BERSALIN

Teknik	Keberkesanan
Epidural 	Amat Berkesan
PCA Fentanyl/Remifentanil 	Berkesan
Entonox 	Agak Berkesan
Suntikan Pethidine	Agak Berkesan
Transcutaneous Electical Nerve Stimulation(TENS) 	Kurang bukti keberkesanan
Akupunktur / Aromaterapi/ Urutan	Kurang bukti keberkesanan

Epidural masa bersalin – Apa yang anda perlu

Epidural adalah ubat tahan sakit yang bertindak terus kepada saraf-saraf yang terlibat dalam proses bersalin

Epidural hanya diberikan oleh doktor bius yang terlatih

Proses persediaan untuk teknik epidural

- Anda akan diberikan cecair intravena
- Anda perlu memberikan kebenaran bertulis
- Adalah sangat penting untuk anda tidak bergerak semasa prosedur
- Memasukkan tiub epidural dan seterusnya memberikan ubat bius melalui tiub tersebut
- Keseluruhan prosidur dan masa untuk mencapai pengurangan kesakitan akan mengambil masa 30-40 minit
- Anda dan kandungan anda akan dipantau sepanjang proses bersalin

Kelebihan Epidural

- Paling berkesan berbanding dengan teknik lain
- Lazimnya, epidural tidak memberi kesan sampingan kepada kandungan
- Ubat bius boleh ditambah untuk kegunaan pembedahan Cesarean jika diperlukan

Masalah yang mungkin berlaku dengan epidural

Kebanyakan ibu berpuas hati dengan epidural. Bagi kebanyakan wanita, epidural tidak mendatangkan apa-apa kesan sampingan. Namun begitu, masalah yang mungkin berlaku adalah seperti berikut

**Rujuk Jadual Risiko Epidural*

Appendix 12.6: SEDATION SCORE

Score	Sedation level	Clinical findings
0	None	Patient is wake and alert
1	Mild	Occasionally drowsy, easy to rouse, and can stay awake once awoken
2	Moderate	Constantly drowsy, still easy to rouse, unable to stay awake once awoken
3	Severe	Somnolent, difficult to rouse, severe respiratory depression
5	Sleep	Patient asleep

Appendix 12.7: POLICY FOR DIET IN LABOUR

a) Goals

I. To ensure patient comfort, meeting energy and hydration requirements during labour.

II. To reduce the risk of maternal mortality and morbidity associated with aspiration of stomach contents during labour and caesarean section.

b) Clinical Policy Guidelines

I. Definition applies in this document:
Established labour - regular effective uterine contractions with cervical dilatation more than 3cm

II. Fasting protocol

i) Women in established labour with the following conditions, **may only have clear, non-particulated fluids** (non-carbonated sports drink e.g. Gatorade, 100 plus edge are recommended). **NO** food allowed.

- BMI > 40 at booking
- Multiple pregnancy
- Breech presentation
- Oxytocin augmentation
- Non reassuring CTG
- Meconium stain liquor
- Slow progress
- IUGR
- Prematurity less than 36/40
- APH
- Previous LSCS
- PIH
- Medical illness e.g. Cardiac disease
- Diabetes
- Women who had opioids, entonox and epidural for analgesia*

ii) All other women in labour may drink clear fluids (as above) and have a light diet. e.g. soup, bread, low fat yoghurt and cereal, until advanced stage of labour e.g. 6cm.

iii) *Women who had opioids must be allowed 4 hours to elapse since last dose before allowing light diet.

iv) When a definite decision has been made for any operative procedure, including trial of assisted vaginal delivery, the parturient must be kept NBM.

v) Women in labour should be regularly assessed to determine hydration status, especially where loss of fluids due to vomiting is a problem. Intravenous fluids may be administered to replace fluid and prevent dehydration. Anti-emetics may be prescribed by a medical officer if required.

vi) Fasting status should be subject to regular review. Labour is a dynamic situation and the likelihood of requiring anaesthetic or obstetric intervention may alter during its course.


PAIN FREE
PROGRAM
Tranformasi Konsep Rawatan
Pelanggan Bebas Kesakitan