TOG 2nd Decision Tree CONCLAVE

FEDERATION OF OBSTETRIC AND GYNAECOLOGICAL SOCIETIES OF INDIA
FOGSI

TOG 2nd Decision Tree Conclave

ALGORITHMS

science integra

President's Message

From the desk of Dr. Rishma Dhillon Pai – President, FOGSI

Dear Colleagues,

It gives me great pleasure to present to you the FOGSI Times of Gynaecology (TOG) Decision Tree.

The field of obstetrics and gynecology is dynamic and constantly there are changes and updates in diagnosis and management protocols. Even within the specialty, doctors have many different methods of managing a problem.

Keeping this in mind we at FOGSI decided to put together a group of experts and brainstorm on the best and latest management protocols in certain important areas such as preterm labour, caesarean section, diabetes in pregnancy etc.

After two days of debates and discussions, a decision tree for each topic was made.

This was further reviewed by all the members and the conveners and the results have been put together.

We hope that you will find these simple algorithms useful in your day to day practice.

""Anyone who stops learning is old, whether at twenty or eighty. Anyone who keeps learning stays young." — Henry Ford

Best wishes!

Dr. Rishma Dhillon Pai

President 2017 - Federation of Obstetrics & Gynaecological Societies of India (FOGSI)
President (Elect- 2018) – Indian Society for Assisted Reproduction (ISAR)
Hon. Gen. Secretary - Indian Association of Gynaecological Endoscopists (IAGE)
Hon. Gen. Secretary- Mumbai Obstetrics and Gynaecological Society
Board Member - World Endometriosis Society (WES)

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TOG 2nd Decision Tree CONCLAVE

PRETERM LABOUR

Moderators : Dr. Rishma Dhillon Pai, Dr. Madhuri Patel

Panel Members : Dr. Punit Bhojani, Dr. Bipin Pandit, Dr. Muralidhar Pai, Dr. Ranjana Khanna, Dr. Sarita Bhalerao, Dr. Sonia Malik

From left to right: Dr. Sonia Malik, Dr. Muralidhar Pai, Dr. Ranjana Khanna, Dr. Rishma Dhillon Pai, Dr. Sarita Bhalerao, Dr. Punit Bhojani, Dr. Madhuri Patelw

Preface

Preterm labor is the labor that starts before 37 weeks' of gestation. It is an important problem in obstetrics that affects 23% of pregnancies in India. It is considered as one of the most important risk factors for neonatal morbidity and mortality.

Preterm labor is a multifactorial problem and it's most common causes include ascending infection, multiple gestations polyhydramnios, and uterine developmental malformations. Although the improved ability of obstetric care providers to identify pregnant women at risk for preterm delivery has increased, the overall incidence of preterm birth has remained unchanged for the past 30 years.

Among the various risk factors such as nutritional status, chronic diseases, and intrauterine malformation contributing to preterm labor, the strongest ones are multiple pregnancies and previous incidence of preterm delivery. In order to identify asymptomatic women at the risk of preterm delivery, cervical length assessment has been recommended to be performed in the second trimester of pregnancy.

For a gynecologist, knowledge of the molecular mechanisms responsible for the process of preterm labor and its early diagnosis is important.

With a thorough review of the literature assessing the causes and consequences of preterm labor, FOGSI presents the following algorithm of diagnostic approach and possible preventive measures that provide a framework to improve the outcomes of preterm delivery.

Table 1. Common tocolytic agents

Agent	Dose	Maternal/fetal side effects	Contra-indications	Remarks
Beta-adrenergic receptor agonists Isoxsuprine	40 mg in 500 mg RL 8 drops/min (0.04 mg/min Drip rate will be set at 8 drops per minute (0.04mg/min).The drop rate will be increased by 8 drops/minute every 15 minutes till uterus becomes quiet Isoxsurine drip will be continued for 12 hrs after the uterine quiescence. Maximum dose should not exceed more than 0.5mg/min. Subsequently Isoxsuprine will be given orally in the form of tablet/ retard capsules 60-80mg in divided dose.	Maternal: Tachycardia, hypotension, tremor, palpitations, shortness of breath, chest discomfort, pulmonary edema, hypokalemia, and hyperglycemia	Tachycardia-sensitive maternal cardiac disease and poorly controlled diabetes mellitus	**DCGI approval for PTL India**
Oxytocin receptor antagonist (Atosiban)	6.5 mg IV stat Initial bolus dose 6.75 mg over one minute, followed by an Infusion of 18 mg/h for 3 h and then 6 mg/h for up to 45 h.	Headache, nausea, vomiting, rash, hyperglycemia, injection site reaction		Beneficial in cardiac disease
PGSI (Indomethacin)	25 mg TID Loading dose of 50 mg rectally or 50-100 mg orally, then 25-50mg orally every 6 hr × 48 h.	Maternal: Nausea, esophageal reflux, gastritis, and emesis; platelet dysfunction is rarely of clinical significance in patients without underlying bleeding disorder Fetal: In utero constriction of ductus arteriosus*, oligohydramnios*, necrotizing enterocolitis in preterm newborns, and patent ductus arteriosus in newborn†	Platelet dysfunction or bleeding disorder, hepatic dysfunction, gastrointestinal ulcerative disease, renal dysfunction, and asthma (in women with hypersensitivity to aspirin)	Oral route **Useful in poly-hydramnios cardiac disease**
Calcium channel blockers (nifedipine) **Note: Nifedipine is not approved in PTL by DCGI in India**	20m g stat Repeat every 6 hourly (10-20 mg)	Maternal: Dizziness, tachycardia, flushing, and hypotension; suppression of heart rate, contractility, and left ventricular systolic pressure when used with magnesium sulfate; and elevation of hepatic transaminases	Hypotension and preload-dependent cardiac lesions, such as aortic insufficiency	Oral route

DEFINITION AND TERMINOLOGY

Delivery less than 37 weeks (WHO Fact sheet , Nov 2017)

Subcategory

- Extremely preterm: Less than 28 weeks
- Very preterm : 28-32 weeks
- Late preterm : 32-37 weeks

Suspected/threatened preterm labour: uterine contractions without cervical dilatation

Diagnosed preterm labour: uterine contractions with cervical changes

Established preterm labour: uterine contractions plus progressive cervical dilatation more than 4 cms

ASSESSMENT AND MANAGEMENT OF PRETERM LABOUR (<37 WEEKS)

Review history
Medical, surgical, obstetric, social

Assess for signs and symptoms
Pelvic pressure, lower abdominal cramping, lower back pain, vaginal discharge - mucous, blood, fluid, Regular uterine activity

Physical examination

- Vital signs
- Abdominal palpation
- Fetal surveillance – FHR, CTG
- Sterile speculum exam
  - » Identify if ROM
  - » Visualize cervix/membranes
  - » High vaginal swab for culture and GBS
  - » Test for Fetal fibronectin(if available)
- Cervical dilatation
  - » Sterile digital vaginal exam unless ROM, placenta praevia
- Ultrasound – if available
- Fetal growth and wellbeing
- TVS for cervical length

Laboratory tests

- Midstream urine for M/C and S
- CBC, RBS, CRP

Neuroprotectives				
Magnesium sulfate	4 g IV initially followed by 1g/hour X 24 hours	Maternal: Causes flushing, diaphoresis, nausea, loss of deep tendon reflexes, respiratory depression, and cardiac arrest; suppresses heart rate, contractility and left ventricular systolic pressure when used with calcium channel blockers; and produces neuromuscular blockade when used with calcium-channel blockers Fetal: Neonatal depression	Myasthenia gravis	Not very effective for tocolysis but has neuro-protective role
†Data are conflicting regarding this association.				

Maintenance:

Indian evidence suggests that isoxsuprine is superior with regards to maternal and fetal outcome when administered in appropriate doses.

Evidence 1

Jaju et al (Dec 2017) in a recently concluded study in Indian patients reported that patients receiving oral dose of isoxsuprine with a maximum daily dose of up to 40 mg for an average of 23 days had a mean latency period of 37 days. Significant improvement in prolongation of delivery beyond 48 hours and perinatal outcomes were also noted amongst these patients on isoxsuprine versus other pharmacological agents.

Evidence 2

In study reported by V.K. Singh et al, isoxsuprine was initially administered intravenously, which was followed by maintenance oral therapy till 37 weeks of gestation. In this study, the mean latency period reported was 28 days, maximum being 70 days (Singh VK et al., J. Obstet and Gynecol of India).

In India, clinician should decide the maintenance based on patients response.

In utero transfer

Aim for in-utero transfer whenever necessary after 1st dose of steroids

Initial treatment

Steroids

- Give dexamethasone/betamethasone 24–34 weeks mandatory unless active infection
- From 34-37 weeks recent data indicates reduction in respiratory morbidity
- Betamethasone 12 mg 24 hours apart (use bethamethasone propionate)
- Dexamethasone 6 mg 12 hourly 4 doses (preferred in patients with diabetes, hypertension, PIH)

Rescue course

- If pregnancy continues beyond 7 days after primary dose and if you suspect she will deliver within 7 days (delivery is imminent) then rescue course of betamethasone or dexamethasone can be given up to 34 weeks of gestation
- Repeated doses are not recommended

Tocolysis

Need to be considered in threatened and diagnosed preterm labor

- Isoxsuprine. Refer Table 1.

Antibiotics

- If established labor (or imminent risk of PTB) give intrapartum GBS prophylaxis regardless of GBS status or membrane status
- If chorioamnionitis (membranes intact or ruptured)
  - » Ampicillin (or Amoxycillin) 2 g IV initial dose, then 1 g IV every 6 hours
  - » Gentamicin 5 mg/kg IV daily
  - » Metronidazole 500 mg IV every 12 hours
- If Penicillin hypersensitivity and chorioamnionitis:
  - » Clindamycin 600 mg IV every 8 hours and
  - » Gentamicin 5 mg/kg IV daily and
  - » Metronidazole 500 mg IV every 12 hours
- If labor does not ensue (and no evidence of chorioamnionitis) and membranes intact then cease antibiotics
- Coamoxyclav not to be given

Neuroprotection

1. Magnesium Sulfate
   - Gestational age 24–32 weeks
   - Labor established or birth imminent

Loading dose: 4 g IV bolus over 20 minutes

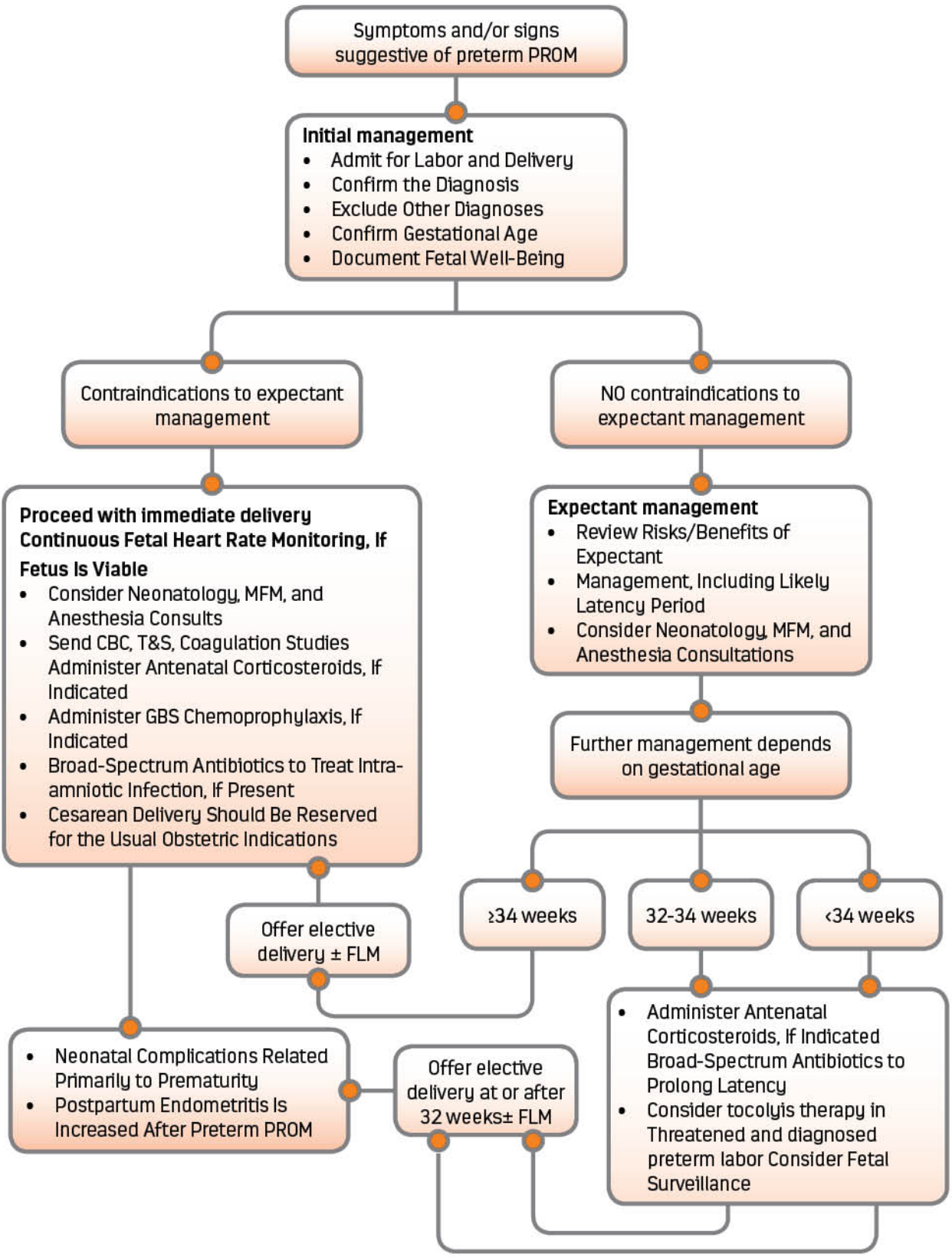
Maintenance dose: 1 g/hour for 24 hours or until birth – whichever occurs first

2. Delayed cord clamping up to 30s not more than 3 minutes except Rh negative mother and HIV+

Prepare for birth

- Recommend vaginal birth unless there are specific contraindications to vaginal birth or maternal conditions necessitating caesarean section
- Vacuum extraction contraindicated risk of IVH

MANAGEMENT ALGORITHM FOR PRETERM PREMATURE RUPTURE OF MEMBRANES



CBC: complete blood count; FLM: fetal lung maturity test; GBS: group B beta-hemolytic Streptococcus; MFM: maternal-fetal medicine; PROM: premature rupture of membranes; T&S: type and screen test

PREDICTION AND PREVENTION OF PRETERM BIRTH

Progesterone for the prevention of preterm birth

History of previous singleton preterm birth (16 to 37 weeks)

↓

17-α-hydroxy progesterone caproate 250 mg IM at 16 to 20 weeks and weekly until 36 weeks

Selective or universal screening (18 through 24 weeks)

↓

Transvaginal cervical length ≤20mm

↓

Vaginal progesterone: 200 mg, suppositories or 90 mg, vaginal gel until 36 weeks
No proven benefit in twins or triplets

Sonographic cervical length measurement

Detection of a short cervix by transvaginal ultrasound at 18 to 24 weeks gestation is the most powerful predictor of spontaneous birth.

Cervical length and PTL prediction

↓

Detection of short cervix (18 to 24 weeks): most powerful predictor of spontaneous preterm birth
Most common cut off: <25 mm to predict preterm birth at <35 weeks gestation

INDICATION FOR CERVICAL CERCLAGE

History of 1 or > 2nd trimester losses (painless dilation, without labor or abruptio placenta)	Prior cerclage for painless dilation	Cervical dilation in the 2nd trimester (present pregnancy)	Prior spontaneous PTB, cervical length of <25 mm before 32 weeks

CONCLUSION

- Preterm labor is an improtant factor for neonatal morbidity and mortality.
- Antenatal corticosteroids are recomended to reduce neonatal morbidity and mortality.
- Tocolytics have been found to be useful in delaying preterm labor.
- Beta-adrenergic receptor agonists, isoxsuprine, has been approved by DCGI for use in preterm labor in Indian women.

ANTENATAL CARE CHECKLIST

Moderators : Dr. Suchitra Pandit, Dr. HP Pattanaik

Panel Members : Dr. Sujata Dalvi, Dr. Geetha Balsarkar, Dr. Vanita Raut, Dr. Anahita Chauhan, Dr. Ritu Joshi

From left to right: Dr. Ritu Joshi, Dr. Sujata Dalvi, Dr. Suchitra Pandit, Dr. HP Pattanaik, Dr. Vanita Raut, Dr. Geetha Balsarkar, Dr. Anahita Chauhan

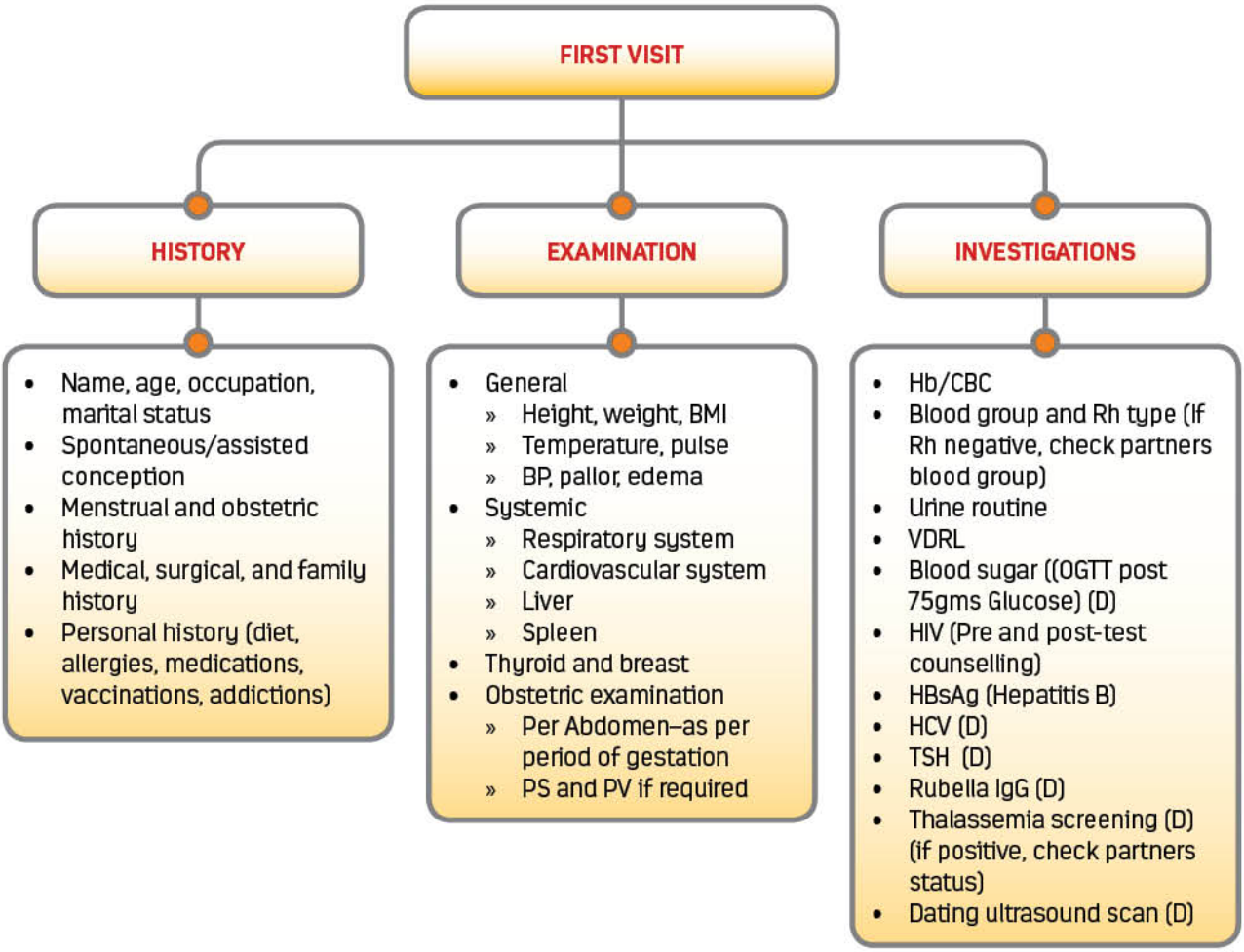
Preface

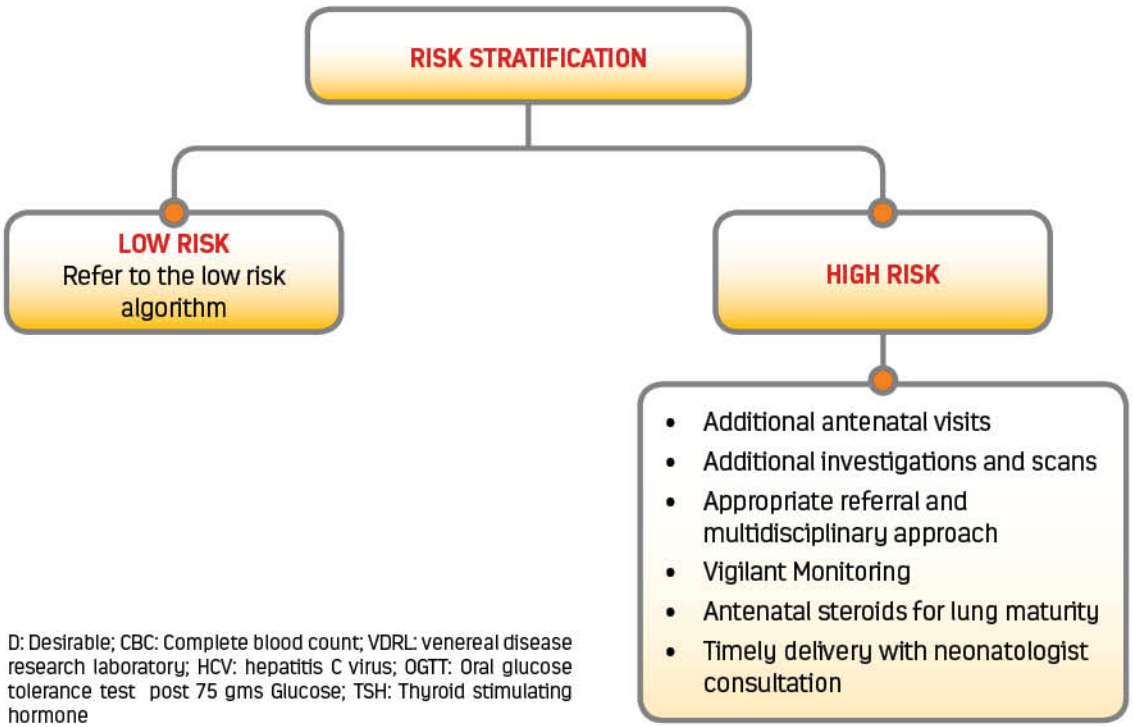
Routine antenatal care should be provided to all pregnant women to ensure the best health conditions for both pregnant mothers and their fetuses during pregnancy. Antenatal care includes risk identification, prevention and management of pregnancy-specific or other concomitant condition, education and health promotion.

Most guidelines recommends screening interventions that include screening for syphilis, human immunovirus, anemia (hemoglobin levels) and pre-eclampsia and routine ABO, RhD testing. Also most commonly used interventional screening included screening for fetal anomalies, Down syndrome, early ultrasound (first and second trimester) and late ultrasound and/or Doppler.

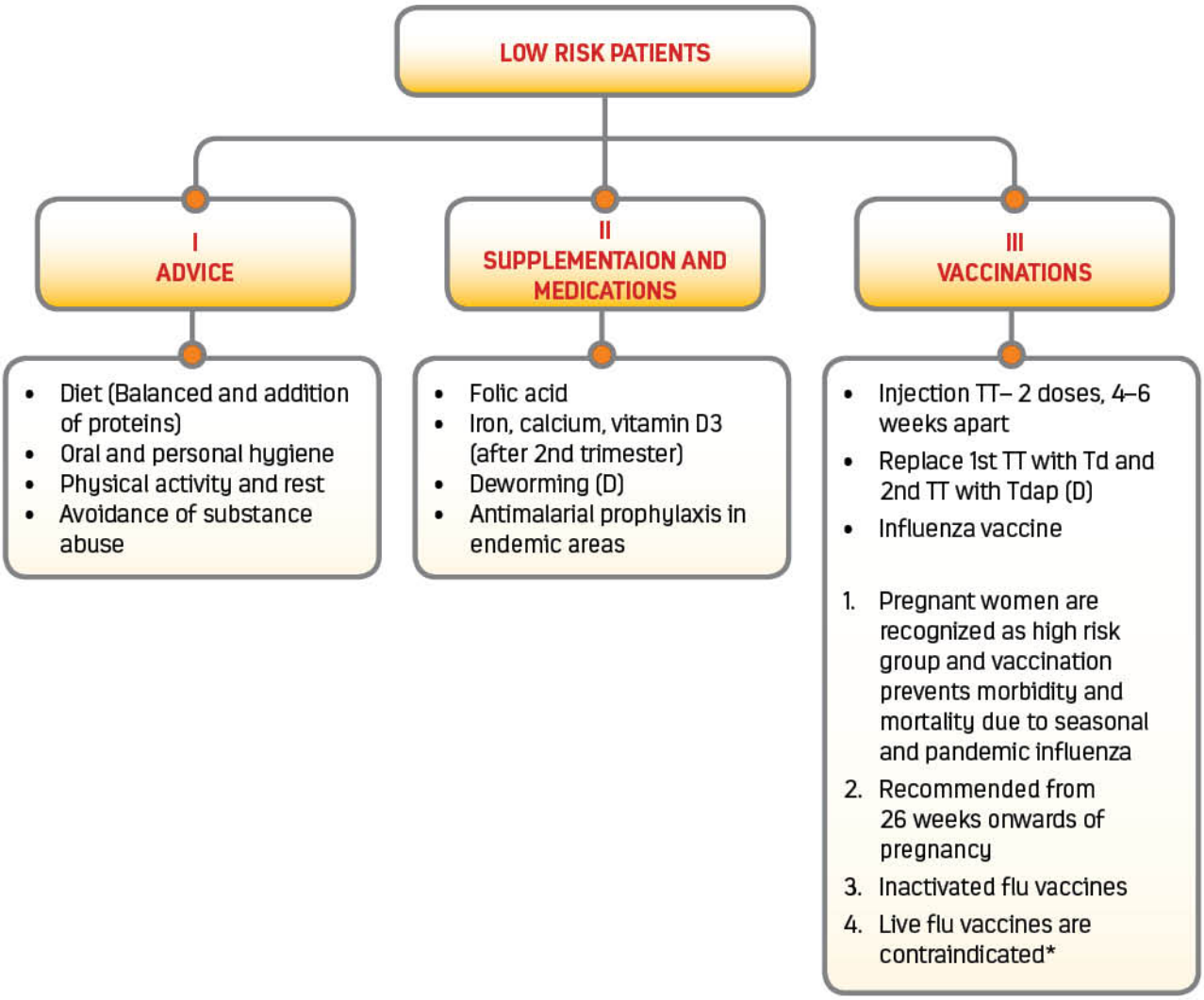
By mapping the current guidelines and practices related to routine antenatal care, a checklist for antenatal care has been created to suite Indian women. This antenatal checklist offers recommendations on clinical care for all pregnant women but it does not offer information on the additional care that will be required by some women such as those with cardiac diseases or renal diseases etc.

CONFIRM PREGNANCY AND ENCOURAGE EARLY REGISTRATION





D: Desirable; CBC: Complete blood count; VDRL: venereal disease research laboratory; HCV: hepatitis C virus; OGTT: Oral glucose tolerance test post 75 gms Glucose; TSH: Thyroid stimulating hormone



Subunit have favourable reactogenicity compared to split vaccines

D: Desirable; TDaP: Tetanus, diphtheria, and pertussis ; Td: Booster vaccine for tetanus and diphtheria

*Reference: Beyer WE et al. Clin Drug Investig. 1998;15(1):1-12.

Centers for Disease Control and Prevention Key Facts About Influenza (Flu) Available from: https://www.cdc.gov/flu/keyfacts.htm ; accessed on 3rd January 2018)

LOW RISK PATIENTS

IV
SCHEDULE OF VISITS

- Once in 4 weeks–28 weeks
- Once in 2 weeks–28 to 36 weeks
- Once a week–36 to 40 weeks
- At each visit, check for weight, BP, pallor, and fetal assessment
- Risk stratification may change
- Ask about and look for signs of domestic violence if suspected
- Confirm place of delivery and encourage hospital delivery

LOW RISK PATIENTS

V
MANAGEMENT PLAN

- **11–14 weeks:** First trimester combined screening (Ultrasound scan+Dual marker) (D)
- **15–18 weeks:** If FTS not done, offer Quadruple marker (D)
- GCT if not done earlier
- **18–19 weeks**: Anomaly scan
- **24–26 weeks:** Hb/CBC, Urine routine, GCT
- **28–32 weeks**: Growth scan (D)
  - Counsel about breastfeeding and contraception
- **34–36 weeks**: Hb/CBC, Urine routine, GCT (D)
- **36 weeks:** Educate about alert signs of labour (pain, leaking, bleeding, fetal movements)
- **36–38 weeks**:–Ultrasound scan (AFI, Weight, Lie) (D)
- **>38 weeks:** VE
- **39–40 weeks**: Vigilant monitoring and discuss need for IOL
- **Post dated 40 weeks:** Red flag

D: Desirable; FTS: First trimester screening; CBC: Complete blood count; GCT: Glucose challenge tests; AFI: Amniotic fluid index; IOL: Induction of labour

BACTERIAL VAGINOSIS CHECKLIST

Moderators : Dr. Nandita Palshetkar, Dr. Ameet Patki

Panel Members : Dr. Rajesh Modi, Dr. Sunita Arora, Dr. Meenu Handa, Dr. Sarita Sukhija, Dr. Pushpa Nagar , Dr. Dhanashri Natu

From left to right: Dr. Dhanashri Natu, Dr. Sarita Sukhija, Dr. Rajesh Modi, Dr. Nandita Palshetkar, Dr. Ameet Patki, Dr. Sunita Arora, Dr. Meenu Handa, Dr. Pushpa Nagar

Preface

Bacterial vaginosis is the most common urogenital disease affecting about 19-24% of the women during the reproductive age, and occurs as a result of imbalance in the vaginal microbiota. Disruption of the normal Lactobacillus and subsequently increase in predominantly anaerobic bacteria including Gardnerella vaginalis, Mycoplasma hominis, Prevotella, and Peptostreptococcus have led to its occurrence.

Lactobacillus is associated with supporting full-term birth and healthy pregnancy, and is the dominant microbe in the vagina of women. Hence, its disruption increases the risk of potentially severe gynaecological and obstetric complications. Bacterial vaginosis is associated with an elevation of cervico-vaginal pro-inflammatory cytokines including IL-1β and IL-8 which initiates the cascade of inflammatory events involved in labour. Bacterial vaginosis is associated with increased risk of pelvic inflammatory disease, tubal factor infertility, late miscarriage, chorioamnionitis, premature rupture of membranes, preterm birth and postpartum endometritis.

Antibiotic therapy is the current treatment for bacterial vaginosis, but its uncertainty in preventing preterm birth in women has been reported. Also antibiotics are unable to fully eradicate bacterial vaginosis vaginal biofilms-associated bacteria, which can explain its high recurrence rates. Therefore, probiotics have been suggested as an add-on to antibiotic therapy in restoring vaginal lactobacilli and reversing bacterial vaginosis.

The flowchart created by FOGSI guides through the process of bacterial vaginosis in terms of flora included, diagnosis and management options in the affected women.

NORMAL VAGINAL FLORA

Over 50 microbial species have been recovered from the vaginal tract and Lactobacillus is the predominant species.

BACTERIAL VAGINOSIS -DYSBIOSIS

- It is abnormal vaginal discharge characterized by an overgrowth of predominantly anaerobic organisms (Prevotella spp., Peptostreptocci, Mobiluncus spp., and Gardnerella vaginalis) in the vagina leading to a replacement of lactobacilli and an increase in vaginal pH.
- It often remits spontaneously, but may present as chronic or recurrent disease.
- Often seen in women of childbearing age and sometimes even menopausal women.
- Depletion of lactobacilli population and the presence of Gram-negative anaerobes, or in some cases Gram-positive cocci, and aerobic pathogens.

BACTERIAL VAGINOSIS

- Depletion of lactobacilli population
- Presence of Gram-negative anaerobes, Gram-positive cocci, and aerobic pathogens.

SYMPTOMS

- Offensive fishy smelling vaginal discharge
- Not associated with soreness, itching or irritation
- Approximately 50% women are asymptomatic

SIGNS

- Thin white, homogenous discharge coating the walls of the vagina
- No evidence of inflammation
- Unpleasant fishy odour of discharge

BACTERIAL VAGINOSIS DIAGNOSIS

CLINICAL DIAGNOSIS

AMSEL'S Criteria: At least three of the four criteria are present for the diagnosis to be confirmed.

- Homogeneous gray-white discharge
- Fishy smell (using few drops of 10% KOH, positive whiff test)
- Clue cells on wet mount microscopy
  - Full blown ≥ 20%
  - Partial >0 and <20%
- Vaginal pH >4.5

LABORATORY DIAGNOSIS

Gram stained vaginal smear (Hay/Ison criteria, Nugent criteria)

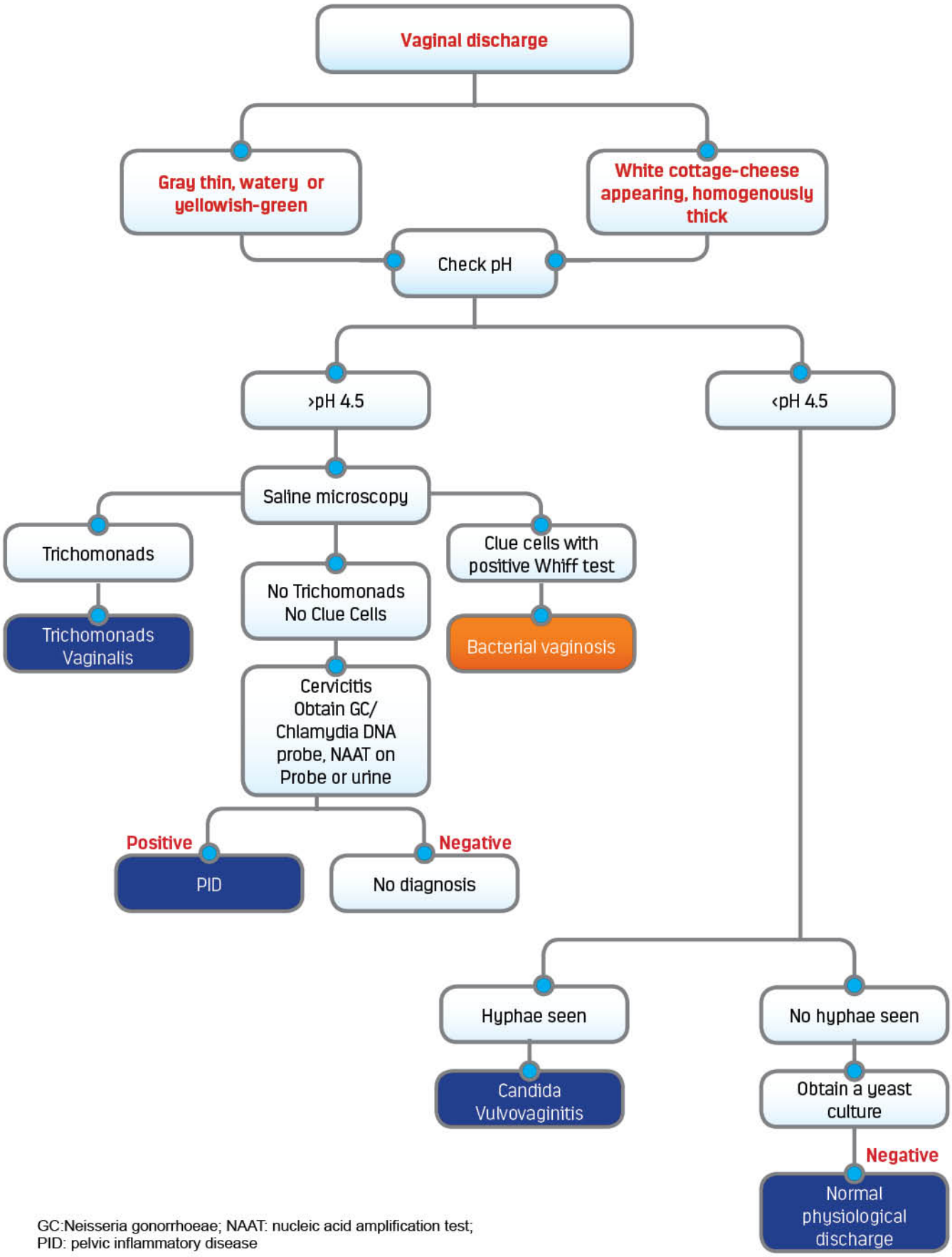
Hay/Ison criteria:

- Grade 1 (Normal): Lactobacillus morphotypes are predominate
- Grade 2 (Intermediate): Mixed flora with some Lactobacilli is present, Gardnerella or Mobiluncus morphotypes are also present
- Grade 3: Predominantly Gardnerella and/or Mobiluncus morpho types and few or absent Lactobacilli.
- Grade 4: Predominantly Gram-positive cocci

The Nugent score:

- Normal: < 4
- Intermediate: 4-6
- Bacterial vaginosis: > 6

DIAGNOSTIC AND DIFFERENTIAL DIAGNOSIS ALGORITHM



GC:Neisseria gonorrhoeae; NAAT: nucleic acid amplification test;
PID: pelvic inflammatory disease

WHOM TO SCREEN?

AMSEL'S Criteria: At least three of the four criteria are present for the diagnosis to be confirmed.

- All symptomatic patients
- Asymptomatic with high risk (previous adverse pregnancy outcome like recurrent miscarriage, preterm delivery, preterm pre-labour rupture of membranes)

SCREENING TEST

- Amsel's Criteria

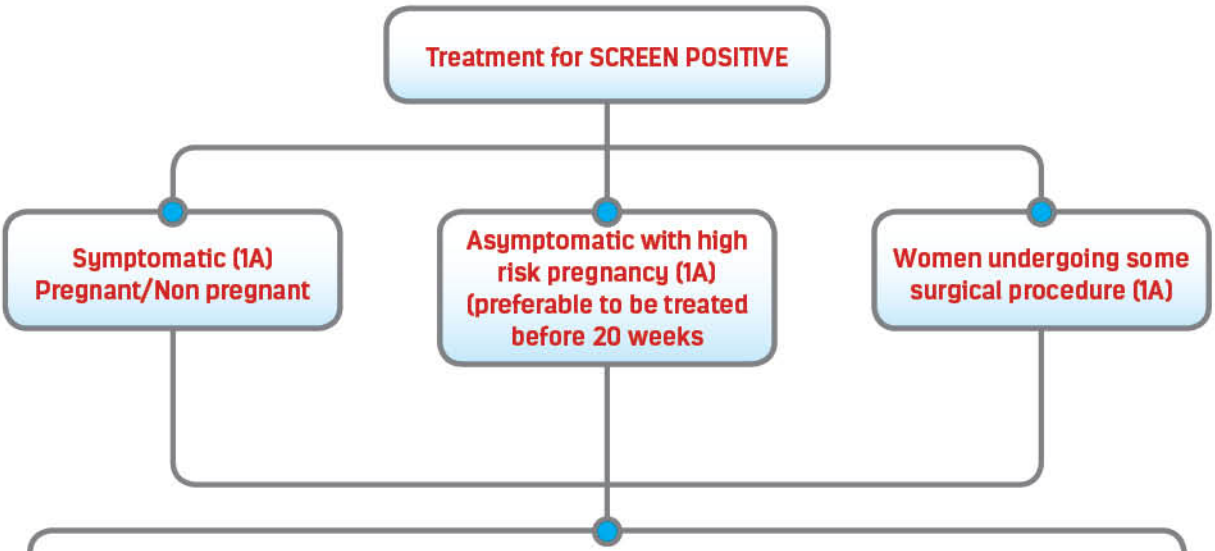
COMPLICATIONS

- Bacterial vaginosis is not a sexually transmitted but it may be associated with STIs and other genital infections.
- Increased risk of acquiring HIV in pregnant women.
- Decrease incidence of Chlamydia have been reported in women treated for asymptomatic bacterial vaginosis
- Its prevalence is high in women with pelvic inflammatory disease (PID)
- It is common in women undergoing elective termination of pregnancy (TOP), and is associated with post-TOP endometritis and PID
- In pregnancy bacterial vaginosis is associated with late miscarriage, preterm birth, preterm premature rupture of membranes, and postpartum endometritis
- It is associated with an increased incidence of vaginal cuff cellulitis and abscess formation following transvaginal hysterectomy
- It is associated with non-gonococcal urethritis in male partners

MANAGEMENT

General advice: (Grade C)

- To avoid vaginal douching
- Avoid use of shower gel
- Use of antiseptic agent or shampoo



Co-treatment with antibiotic and probiotic

- Metronidazole* 400 mg twice daily for 5-7 days (A)

  OR
- Metronidazole 2 g single dose (A)

  OR
- Intravaginal metronidazole gel (0.75%) once daily for 5 days (A)

  OR
- Intravaginal clindamycin cream (2%) once daily for 7 days
- Probiotics: Lactobacilli species like acidophilus, rhamnosus, reuterii, fermentum etc. for 15 days

*Alcohol to be avoided when patient is on metronidazole

- Treatment of recurrence: Co-treatment with antibiotics and probiotics but probiotics is preferred

(BASHH:British Association for sexual health and HIV 2012)

CESAREAN-SECTION CHECKLIST

Moderators : Dr. Hrishikesh Pai, Dr. Sunita Tandulwadkar

Panel Members : Dr. Maninder Ahuja, Dr. Ameya Purandare, Dr. Surveen Ghumman, Dr. Sheela Mane, Dr. Adarsh Bhargava, Dr. Selvapirya Sarvanan

From left to right: Dr. Ameya Purandare, Dr. Maninder Ahuja, Dr. Selvapirya Sarvanan, Dr. Sunita Tandulwadkar, Dr. Surveen Ghumman, Dr. Adarsh Bhargava, Dr. Hrishikesh Pai

Preface

Caesarean section is a life-saving procedure that is widely used in the obstetric practice. Due to the advances in anaesthetic services and improved surgical techniques, the morbidity and mortality of caesarean procedure have reduced drastically. However, it can cause a significant and sometimes permanent complication, disability or death in settings that lack the facilities to conduct the intervention safely. Caesarean sections should preferably be conducted when medically necessary, as its impact on maternal and perinatal morbidity, pediatric outcomes, and psychological or social well-being are unclear.

In a country that is under-resourced country, we need interventions that will make a difference, hence evidence-based strategies and interventions that reduce morbidity and cost of operation can be beneficial to the patient. Also the women should be offered evidence based support to enable them to make informed decision about childbirth with option of vaginal birth after caesarean section.

Due to the mere vastness of India and the variety in the types of hospital settings, the checklist provided here may have to be individualized as demanded by situations. However, minimum standards should be maintained, which include – Information to woman, planned lower (uterine) segment Caesarean section, procedural aspect, care of the woman. The checklist for caesarean provided is to provide quick guidance in managing women scheduled for caesarean section.

DEFINITION

- Abdominal route of delivery
- When vaginal delivery is not possible not indicated
- For maternal or fetal indication
- To optimize outcome
- Elective/emergency
- After the period of viability

PATIENT DETAILS

• Age
• Parity
• Gestational age
• Single/multiple
• Unscarred/scarred
• Vertex/non-vertex
• Risk factors: Yes/no

ROBSON'S CRITERIA

1	Nullipara, single cephalic, ≥ 37 weeks, spontaneous labour
2	Nullipara, single cephalic, ≥ 37 week A. Induced B. Caesarean section before labour
3	Multipara, single cephalic, ≥ 37 weeks, spontaneous labour
4	Multipara, single cephalic, ≥ 37 weeks A. Induced B. Caesarean section before labour
5	Previous caesarean section, singleton cephalic, ≥ 37 weeks A. Spontaneous labour B. Induced labour C. Caesarean section before labour
6	All nulliparous breeches A. Spontaneous labour B. Induced labour C. Caesarean section before labour
7	All multiparous breeches (including previous caesarean section) (a) Spontaneous labour (b) Induced labour (c) Caesarean section before labour
8	All multiple pregnancies A. Spontaneous labour B. Induced labour C. Caesarean section before labour
9	All abnormal lies (including previous CS but excluding breech) A. Spontaneous labour B. Induced labour C. Caesarean section before labour
10	All singleton cephalic, ≤ 36 weeks (including previous CS) A. Spontaneous labour B. Induced labour C. Caesarean section before labour

INDICATIONS

Maternal	Fetal	Others
To be ticked as appropriate Indications for CS as per government of India guidelines to be mentioned clearly. Refer to the links below: http://nhm.gov.in/nrhm-components/rmnch-a/maternal-health/guidelines.html http://nhm.gov.in/images/pdf/programmes/maternal-health/guidelines/C-section_document_Low_Res_5th_Jan.pdf		

Maternal: BOH, Pregnancy after infertility treatment

Fetal: Fetal distress, FHR decelerations, meconium

Others: LSCS on demand

Emergency	Elective
To be ticked as appropriate	

COUNSELING

- Counseling for indicated LSCS
- Counseling for on demand

CONSENT

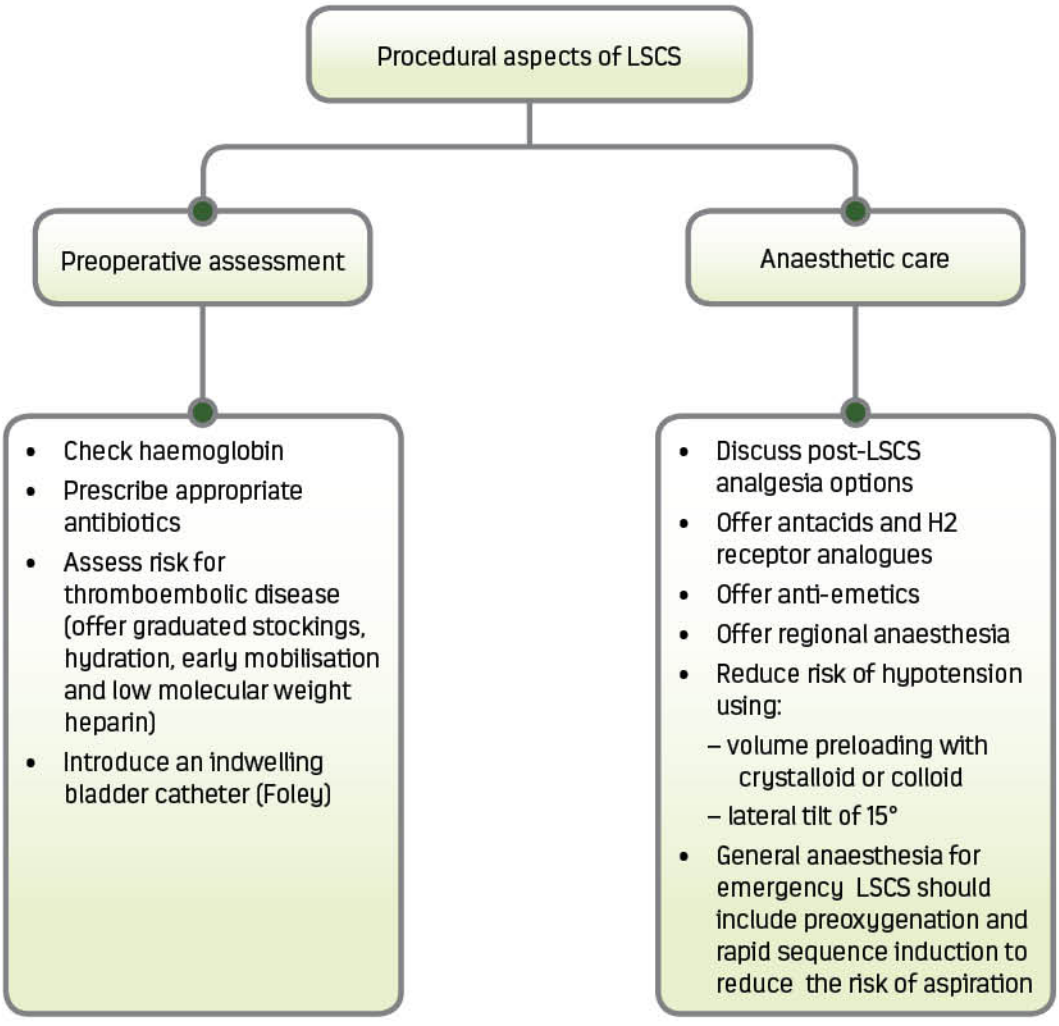
- Mention if emergency or elective
- Clearly denote high risk if any
- Indication for the same
- Type of anesthesia
- Draft of consent should include "*all risks, complications and consequences*"

Kindly refer to the Consent Form as per Government of India guidelines by visiting the following links:

http://nhm.gov.in/nrhm-components/rmnch-a/maternal-health/guidelines.html

http://nhm.gov.in/images/pdf/programmes/maternal-health/guidelines/C-section_document_Low_Res_5th_Jan.pdf

PROCEDURAL ASPECTS OF LSCS

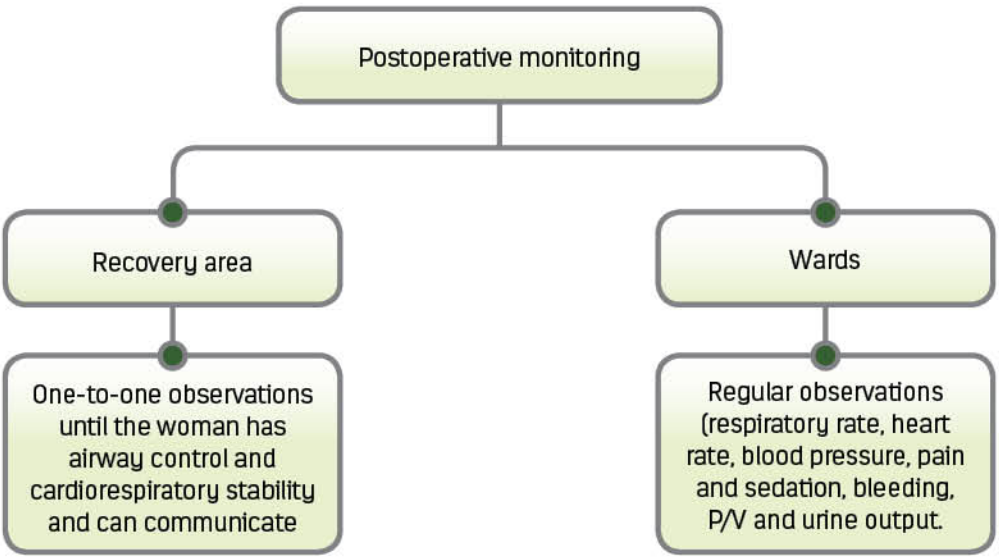


SURGICAL TECHNIQUES

1. Use a transverse lower abdominal incision.
2. Wear double gloves for LSCS, especially for women who are HIV-positive.
3. Use controlled cord traction for removal of the placenta.
4. Close the uterine incision with two suture layers.
5. Facilitate early skin-to-skin contact for mother and baby.
6. Consider women's preferences for birth.
7. Give oxytocin by slow intravenous injection.
8. Hemostasis and active management of 3rd stage.
9. Offer intraoperative contraception.

For technical minutiae, refer Government of India guidelines -
http://nhm.gov.in/nrhm-components/rmnch-a/maternal-health/guidelines.html
http://nhm.gov.in/images/pdf/programmes/maternal-health/guidelines/C-section_document_Low_Res_5th_Jan.pdf)

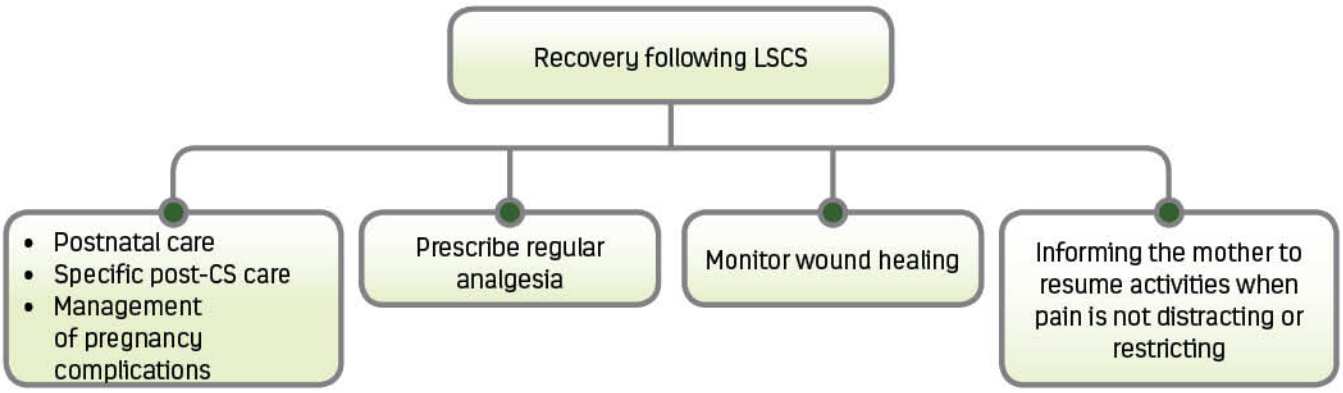
POSTOPERATIVE MONITORING



Care of the woman and her baby after LSCS

1. Women to start breastfeeding as soon as possible.
2. Women who are feeling well and have no complications can eat or drink after appearance of peristalsis.
3. After regional anaesthesia remove catheter when woman is mobile (>12 hours after top-up).
4. Keep wound clean and dry.
5. Offer discharge to women who are recovering and have no complications.

POSTOPERATIVE CARE AND RECOVERY



CS complications to be looked for:

- Endometritis if excessive vaginal bleeding, foul smelling discharge, uterine tenderness, abdominal pain, and/or fever.
- Thromboembolism if calf swelling or respiratory distress.
- Urinary tract infection if urinary symptoms and fever with chills.
- Wound discharge or disruption.
- Urinary tract trauma (VVF)- if leaking urine P/V.

CAESEREAN SECTION ON DEMAND

Caeserean section on demand

- Separate consent.
- Patients and witness signature.
- Clearly mention that its patient's preference and not obstetrician's decision.
- Clearly mention risk, complications and future consequences.

VBAC

1. Indications*
• Singleton: One previous low transverse cesarean should be counseled and offered TOLAC
• Individualize
• Even if patient not a good candidate but admitted to labor floor in active labor, clinical judgement may be used
• Good candidates are those where balance of risk (low) and chance of success (high) are acceptable to patient and provider
• Decisions surrounding TOLAC should include discussion of future pregnancies
2. Contraindication*
• Previous classical or "T" incision
• Prior uterine rupture
• Extensive transfundal uterine surgery
• Contraindication for vaginal delivery (e.g. placenta previa)
3. Counseling and consent
4. Delivery to be supervised by obstetrician in a setting where facilities for emergency CS available
5. Close monitoring of labour and to look for signs of scar rupture
6. Early detection of scar rupture and appropriate management
7. Induction and augmentation of labour- • **Misoprostol not to be used** • PG gel and oxytocin to be judiciously used

*ACOG VBAC guidelines. Practice Bulletin No. 184: Vaginal Birth After Cesarean Delivery. Obstetrics & Gynaecology: November 2017-Volume 130-Issue 5-p e217–233.

HYPERGLYCAEMIA IN PREGNANCY

Moderators : Dr. Parag Biniwale, Dr. Suvarna Khadilkar

Panel Members : Dr. Shanthakumari, Dr. Manavita Mahajan, Dr. Meenakshi Ahuja, Dr. Lata Rajoria

From left to right: Dr. Manavita Mahajan, Dr. Suvarna Khadilkar, Dr. Parag Biniwale, Dr. Meenakshi Ahuja, Dr. Shanthakumari, Dr. Lata Rajoria

Preface

Hyperglycemia in pregnancy is the most common metabolic disorder of pregnancy. This condition is highly associated with the risk of adverse perinatal outcomes including cesarean section, induction of labor, large for gestational age, macrosomia, and infant adiposity.

In addition, abnormal high blood glucose during pregnancy is associated with an increased risk of long-term ill-health outcomes in the mother (type 2 diabetes and cardiovascular disease) and infants (obesity, neural tube defects, and associated cardiometabolic risk).

Oral glucose tolerance test is the diagnostic test of choice that is usually administered during 24 and 28 weeks of gestation. Risk factors that are associated with this condition include physical inactivity, body mass index (BMI) ≥30 kg/m2, hypertension, triglyceride level >250 mg/dL, family history of diabetes, polycystic ovary syndrome, and maternal age ≥40 years.

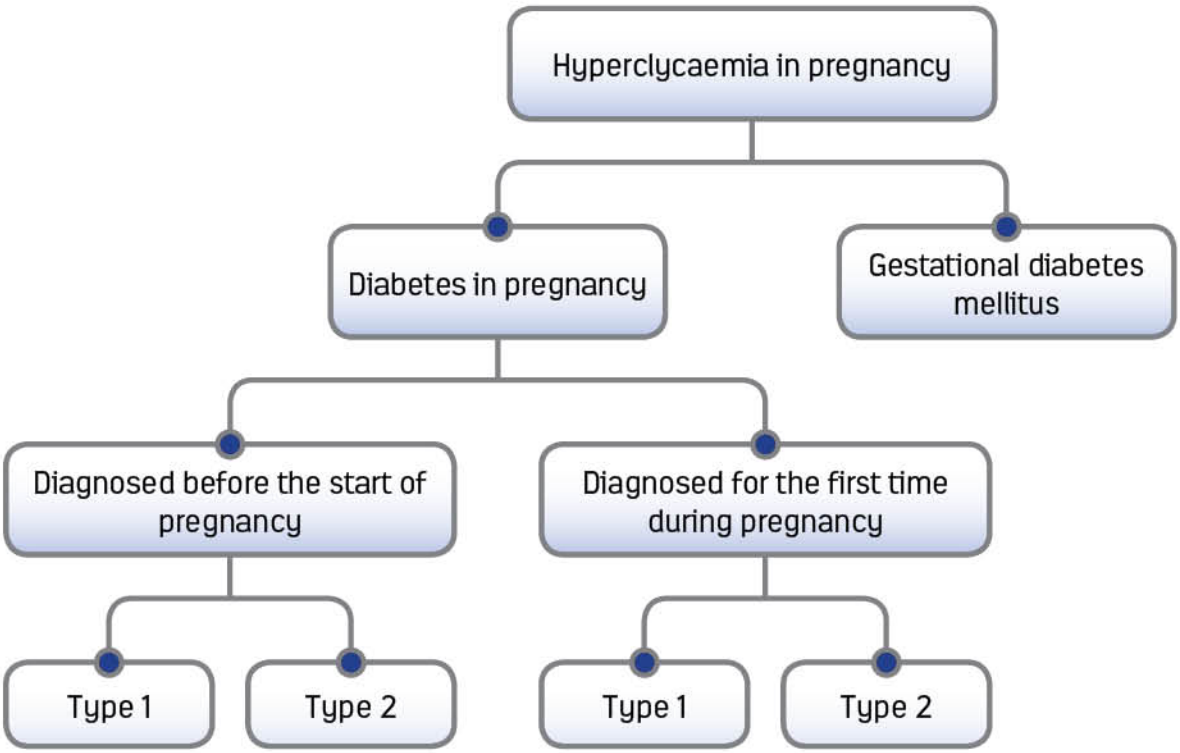
As the prevalence of hyperglycemia in pregnancy and its adverse influence on perinatal outcomes is increasing, clinicians must aim to reduce the hyperglycemia and also the risk of adverse outcomes. Diet and lifestyle modification is highly recommended as the first-line treatment, but additional pharmacological intervention with oral hypoglycemic agents and insulin is required for severe cases.

Self-monitoring of glucose levels is necessary, particularly in women undergoing pharmacological treatment. Understanding the increased risk of adverse outcomes associated with high glucose level in pregnancy, the following protocol from FOGSI provides an approach to achieve normal glycemia supporting pregnant women to live healthy.

PREVENTION

- Identify High risk group - e.g. obese, adolescents with polycystic ovary syndrome (PCOS)
- Preconceptional care: especially for high risk group (obese/PCOS/family history of diabetes/GDM in previous pregnancy/comorbidities
- Women planning to conceive: Give folic acid and vitamin B_{12} supplements

HYPERCLYCAEMIA IN PREGNANCY



MATERNAL ISSUES

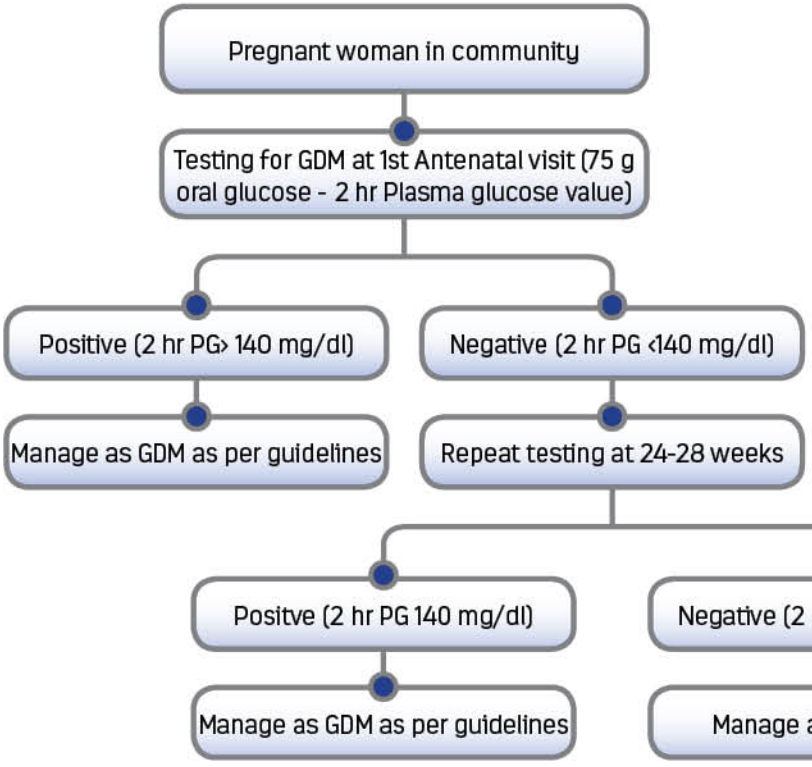
Maternal Risk	
Polyhydramnios	Caesarean section
Pre-eclampsia	Uterine atony
Prolonged labour	Postpartum haemorrhage
Obstructed labour	Infection

DIABETES IN PREGNANCY STUDY GROUP INDIA (DIPSI)

In the antenatal clinic, a pregnant woman after undergoing preliminary clinical examination, has to be given a 75g oral glucose load, without regard to the time of the last meal. A venous blood sample is collected at 2 hours for estimating plasma glucose.

Advantage: The pregnant women need not be fasting. Causes least disturbance in a pregnant woman's routine activities. Serves as both screening and diagnostic procedure.

With 75 gm oral glucose tolerance test (WHO criteria)		
Plasma glucose	**In pregnancy**	**Outside pregnancy**
2 hr > 200 mg/d	Diabetes	Diabetes
2 hr > 140 mg/dl & < 199 mg/dl	Gestational diabetes	Impaired glucose tolerance
2 hr > 120 mg/dl & < 139 mg/dl	Gestational glucose intolerance	-
2 hr <120 mg/dl	Normal	Normal



- PG BSL (DIPSI) > 200 mg % at first visit —> overt DM
- Look for Hypertension
- Retinopathy - fundus examination
- Nephropathy - S. creatinine

ANTENATAL CARE MONITOR AS HIGH RISK PREGNANCY

First Trimester	Check blood pressure, HbA1C, monitor blood sugar level (fasting/postprandial)
Second Trimester	Monitor blood pressure, blood sugar level (fasting/postprandial)
Third trimester	Monitor blood pressure, look for polyhydramnios

MEDICAL MANAGEMENT

Maternal Risk	
Plasma Glucose 140-199mg/dl	Medical nutrition therapy
Plasma Glucose >199mg/dl	Medical nutrition therapy + Insulin
After 1 week Fasting Plasma Glucose target 2-hr Post-Prandial Glucose target	 ~ 90mg/dL ~ 120mg/dL

FETAL RISKS

Fetal risk	
Spontaneous abortion	Congenital malformation
Intra-uterine death	Shoulder dystocia
Stillbirth	Birth injuries
Neonatal hypoglycaemia	Infant respiratory distress Sundrome

FOETAL MONITORING

First trimester	Clinical exam, dating scan, NT scan + biochemical screening, Uterine arteries - prediction of preeclampsia Umbilical arteries, MCA - for the detection and monitoring of IUGR
Second trimester	Clinical exam, anomaly scan 19 wks, triple/quadruple marker if not screened earlier, AFI, foetal echo 22 wks
Third trimester	Clinical exam (fundal height, abdominal girth), growth scans 28, 32, 36 weeks, colour doppler as indicated, AFI, NST 32 wks onward if on insulin
Assess EBW at 38 weeks	Role of steroids: betamethasone to enhance lung maturity

GLYCAEMIC CONTROL

Medical nutrition therapy: Lifestyle management, diet, exercise
Oral antidiabetics: Metformin, glyburide
Insulin

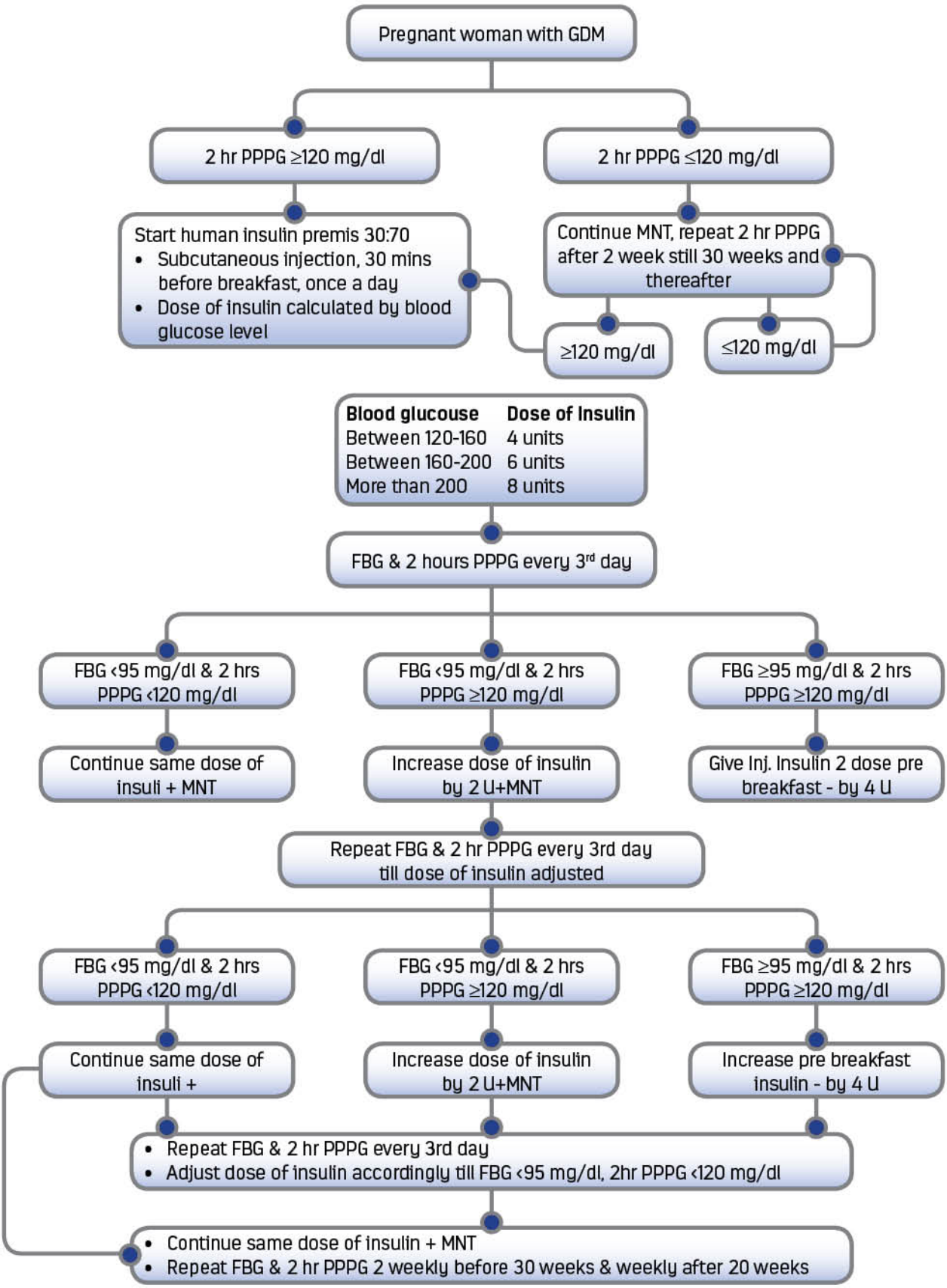
Table 1. Pragmatic use of metformin in mild GDM$, based on biopsychosocial health model

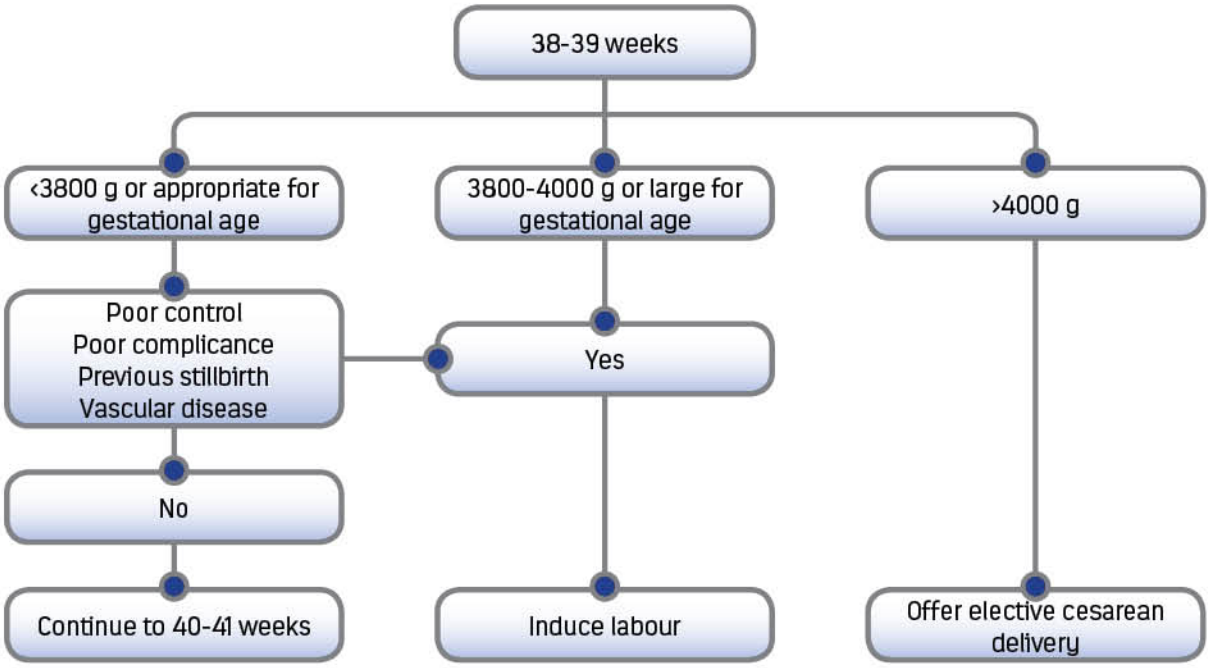
Domain	Clinical situations
Contraindications	
General	All contraindications to metformin use in non-pregnant individuals
Pregnancy specific	Ketonuria Any evidence of maternal distress Any evidence of fetal distress
Indications	As monotherapy
Biological	GDM not responding to medical nutrition therapy GDM detected during late third trimester Poor compliance with the treatment plan when the treatment plan includes insulin Lack of skills for self-management with insulin therapy and monitoring
	As combination therapy, with insulin Uncontrolled hyperglycemia, not responding to optimized insulin regimes Unwanted weight gain with insulin therapy
Psychological	If the suggestion of insulin causes extreme psychological stress When suggestion of insulin causes patient to reduce nutritional intake in order to maintain glycemia
Social	If the suggestion of insulin causes extreme family/social stress Financial burden In health-care settings where insulin is not available or accessible In health-care settings where regular glycemic monitoring is not feasible
Precautions	Regular fetal surveillance Regular maternal surveillance Obstetric monitoring Medical monitoring

$An abnormal result on an oral glucose-tolerance test but a fasting glucose level below 95 mg/dl (Ref.: Landon et al.).
GDM: Gestational diabetes mellitus

	Acarbose	Metformin	Glyburide
Degree of hypeglycemia	+	+	++
Predominantly fasting hyperglycemia		+	
Predominantly post-prandial hyperglycemia	+		+
Risk of hypoglycemia	Safe	Safe	High risk
Gastrointestinal tolerability	Possible	Possible	–
Effect on insulin resistance	–	+	–
Effect on weight	Weight neutral	Weight neutral	Weight gain
Frequency of administration	With each meal	Once (sustained release) to thrice daily (immediate release)	Once or twice daily

INSULIN THERAPY





LABOUR MANAGEMENT – FIRST STAGE

Hyperglycemia in pregnacy controlled on diet, spontaneous labour	Admission CTG partograph blood sugar by glucometer 2 hourly Target level: 80–120mg%, continuous fetal monitoring
Spontaneous labour in patients of hyperglycemia in pregnacy on Insulin/ oral antidiabetics	Admission CTG partograph blood sugar by glucometer 2 hourly Target level: 80–120mg%, continuous fetal monitoring, IV fluid as per blood sugar levels

LABOUR MANAGEMENT – SECOND AND THIRD STAGE

Second stage	Third stage
• Controlled ARM • Anticipate - shoulder dystocia, Assisted vaginal delivery • Neonatologist/ Trained person to resuscitate	• Active management of third stage • W/F- traumatic / atonic PPH

BLOOD SUGAR MANAGEMENT

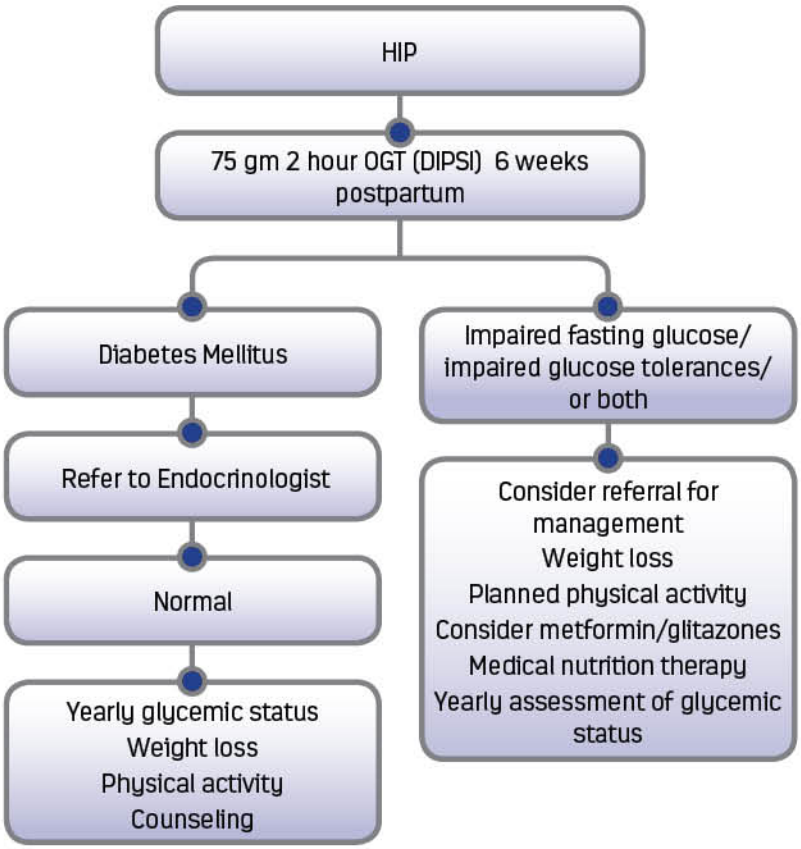
Blood sugar monitoring 2 hrly: Target 80-120 mg%

Blood glucose level	Amount of insulin added in 500 ml normal saline	Rate of normal saline infusion
90-120 mg/dl	0	100 ml/hr (16 drops/min)
120-140 mg/dl	4 U	100 ml/hr (16 drops/min)
140-180 mg/dl	6 U	100 m/hr (16 drops/min)
>180 mg/dl	8 U	100 ml/hr (16 drops/min)

NEW BORN AND POSTPARTUM CARE

New born care	Postpartum care
• Be careful - traumatic delivery • Hypoglycaemia • RDS • Hyperbilirubinaemia	• Breast feeding at earliest • W/F infection • Close monitoring of BSL if on insulin • BSL F / PP on D3 if on MNT / OAD • At 6 weeks - OGCT (DIPSI) • Counsel for lifestyle , diet, exercise • Fastinv plasma:>126 mg/dl • 75 g OGTT 2 hour plasma glucose » Normal: <140 mg/dl » IGT: 140-199 mg/dl » Diabetes: >200 mg/dl

HYPERGLYCEMIA IN PREGNANCY



POSTPARTUM CONTRACEPTION

Barrier	IUD - Cu / LNG
POP/progesterone implant	With due risk COC
Combined oral contraceptive/ injectable/transdermal/intravaginal	Contraindicated with macrovascular disease

MANAGEMENT OF LABOUR

Moderators : Dr. Pratima Mittal, Dr. Shalini Rajaram

Panel Members : Dr. Veena Acharya, Dr. Prabha Luhadia, Dr. Usha Shekhawat, Dr. Niranjan Chavan, Dr. Mahesh Gupta

From left to right: Dr. Mahesh Gupta, Dr. Prabha Luhadia, Dr. Veena Acharya, Dr. Usha Shekhawat, Dr. Pratima Mittal, Dr. Niranjan Chavan, Dr. Shalini Rajaram

Preface

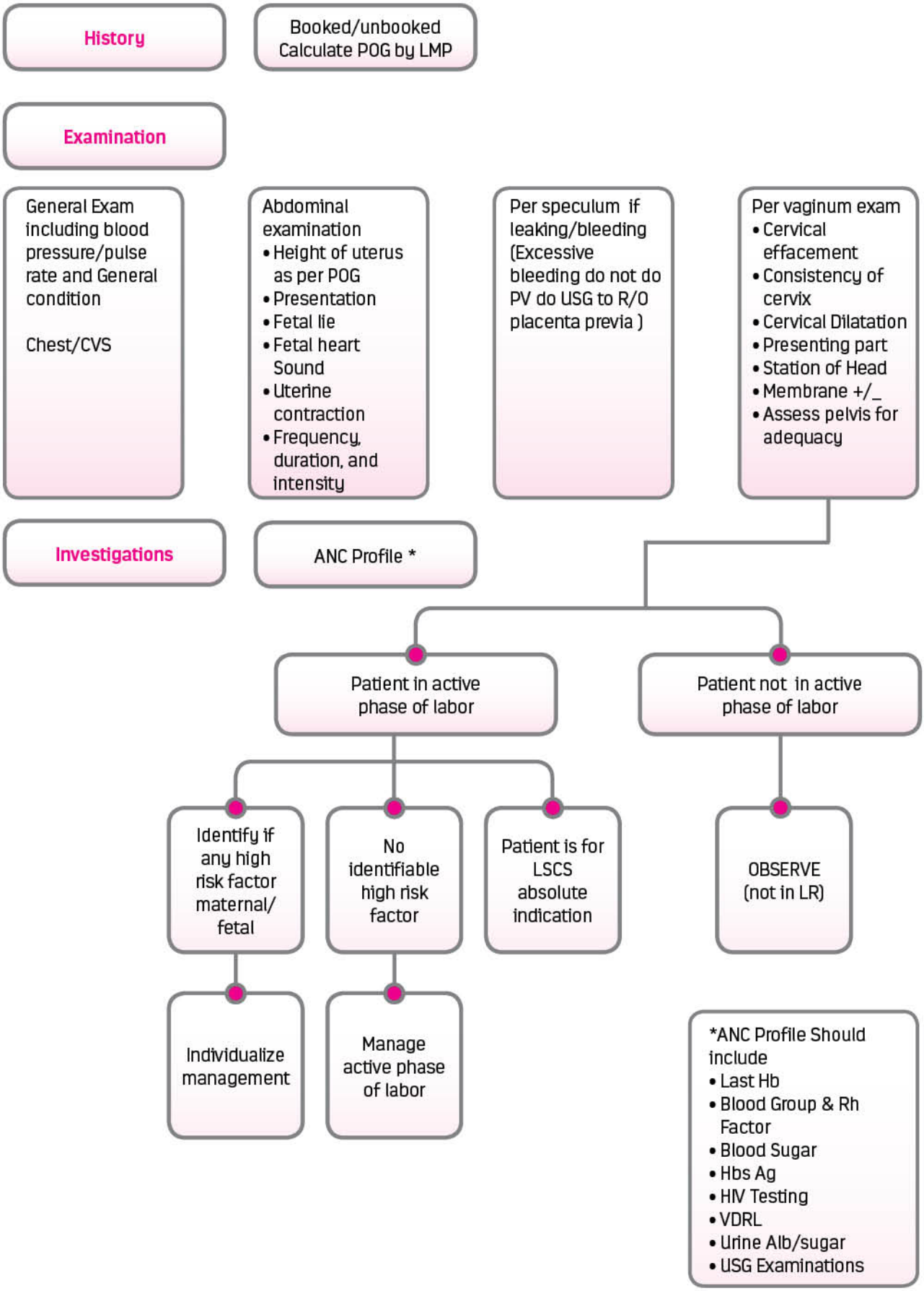
The World Health Organization (WHO) has defined normal birth as "spontaneous in onset, low-risk at the start of labor and remaining so throughout labor and delivery. The infant is born spontaneously in the vertex position between 37 and 42 completed weeks of pregnancy. After birth, mother and infant are in good condition."

The process of labour and delivery has been divided into three stages and each stage carries specific risks to both mother and infant if delay is not timely identified. Hence, it is absolutely essential that management protocols are followed closely.

For timely identification of complications, the available management tools must be utilized effectively and in a manner that conforms to specific criteria. These management tools are all based on regular clinical assessment of the pregnant woman supplemented by expected progress of labour.

This management of labor algorithm provides recommendation for intrapartum management of women who are expected to have a normal birth. There are a number of options available for managing these women, but have insufficient clinical evidence for making strong recommendations for a specific approach. Hence, our approach is based on our clinical experience, data from observational studies, international guidelines, and expert opinions.

INITIAL ASSESSMENT



MANAGEMENT OF 1ST STAGE OF LABOUR

1st Stage of labour: Till full dilatation of cervix

Goal: Watchful expectancy and careful monitoring

- Emotional support and assistance
- Upright position & ambulation is encouraged
- Perineum preparation: Clipping of hair, no shaving
- No need for routine enema (given only if rectum is loaded)
- Light fluid diet
- Secure IV line
- Encourage to empty bladder
- Pain management: Epidural anaesthesia/tramadol 1mg/kg IM

Note: No routine use of antibiotics during labour

Partogram charting: Fetal condition/progress of labor/maternal condition/Intervention

- » Fetal heart monitoring Every 30 min
- » Liquor Meconium / Clear
- » Moulding 0/+ /++/+++

- Half hourly monitor frequency of contractions
- 4 Hourly vaginal examination for
  - » Descent of head
  - » Cervical dilatation
- Any drugs if given
- Maternal pulse/BP/temperature
- Monitor for output, proteins and ketones

Re evaluate maternal and fetal condition

- Absent FHR
- Abnormal FHR
- Malpresentation
- Cord presentation
- Significant MSL
- PROM
- Maternal pyrexia
- Fresh bleeding developing in labour
- Raised diastolic BP >90 mmHg, systolic BP > 140 mmHg
- Oxytocin augmentation

Criteria for continuous CTG

- Abnormal FHR
- Significant MSL
- Maternal pyrexia
- Fresh bleeding in labour
- Oxytocin augmentation
- During establishing or adding bolus of regional anaesthesia

Active first stage of labour (>4cm)
Delay: Non progress of dilatataion after 4 cm for 2 hr inspite of good uterine contractions and **Arrest of labor** is considered after 4 hrs

Dilatation < 0.5 cm/hour in primigravida and < 0.5-0.7 cm/hour in multigravida

Membranes

- Ruptured → Oxytocin augmentation
- Intact → Amniotomy → Watchful expectancy

Review progress after 4 hours

- Oxytocin augmentation
- Watchful expectancy

No or delayed progress

Re evaluation

MANAGEMENT OF 2ND STAGE OF LABOUR

2nd Stage of labour: From full dilatation to delivery of the foetus

- Position: dorsal position with 15° lateral tilt
- Toileting of the external genitalia
- Aseptic precautions 3 C's: Clean hand, Clean surface, Clean cord cutting & ligature

Partogram charting

- Hourly pulse, BP & temperature
- Empty bladder if full
- Half hourly monitor frequency of contractions
- **Hourly vaginal examination**
- **Every 15 mins FHS**

Re evaluate

- Absent FHR
- Abnormal FHR
- Significant MSL
- Maternal pyrexia
- Fresh bleeding developing in labour
- Raised diastolic BP >90 mm Hg, systolic BP > 140 mm Hg
- Oxytocin augmentation

Delayed 2nd stage: Primi >3 hours, (4hrs with epidural)

Multi >2 hours If epidural ((3hrs with epidural)

only under strict maternal & fetal monitoring and careful watch for descent of head

Evaluate: Contractions, Station, Rotation and FHR

Start oxytocin if uterine contractions inadequate

If not delivered by 3 hours in primi and by 2 hours in multi

Operative Vaginal Delivery / CS

Delivery of head*

- Routine episiotomy not required
- Maintain flexion of head by pushing occiput downward with one hand & other hand supports the perineum
- Encourage pushing with Valsalva manoeuvre
- Fundal pressure should not be given

Delivery of shoulder

- Not to be hasty in delivery
- After restitution, hold the neck with both hands, draw the head downward till anterior shoulder is delivered
- Next head is drawn upward to deliver posterior shoulder

ESSENTIAL NEWBORN CARE

- Double set of sheets
- No suction to be done if baby has cried
- Keep the baby on mother's abdomen
- Delayed cord clamping after 60 sec

*Look for loops of cord around the neck and release the cord if around the neck

MANAGEMENT OF 3RD STAGE OF LABOUR

3rd Stage of labour: From delivery of foetus till delivery of placenta

Administer oxytocin 10 units IM immediately after birth of baby (Oxytocin to be kept at <30°C temp)Keep other uterotonics (Misoprostol/Prostaglandin) ready if the patient has PPH

Delayed cord clamping: Clamp and cut the umbilical cord after 1-2 minutes of birth

Earlier cord clamping may be required: Need for neonatal resuscitation/Rh –ve pregnancy/FGR baby with abnormal Doppler parameters

Controlled cord traction

If placenta is not delivered after 30 minutes of baby delivery → Manual removal of placenta

- Examine placenta and membranes
- Inspect vulva, vagina andperinuem

MANAGEMENT OF 4TH STAGE OF LABOUR (ONE HOUR AFTER PLACENTAL EXPULSION)

- Maternal vital monitoring (pulse/BP/respiratory rate/temperature)
- Breast feeding within 1 hr of delivery
- Inspection of perineum for blood loss and swelling if episiotomy
- Look for uterine tone
- Advice contraception

POST PARTUM CARE

Observe:

- Maternal pulse/BP/ Resp.Rate/Temp)
- Bleeding per vaginum
- Breast feeding given properly
- Uterine involution
- If pt has passed urine and stool

Counselling for:

- To report danger signs as pain/swelling of legs / Excessive bleeding / foul smelling discharge
- Contraception

MALPOSITIONS