IN THE NAME OF GOD

Prenatal care

Dr sahhaf
Perinatology department
Tabriz medical university
1400

Prenatal care: Initial assessment

- The three main components of prenatal care are
- risk assessment,
- health promotion and education, and
- therapeutic intervention

GOALS

- The major goal of prenatal care is to help ensure the birth of a healthy newborn while minimizing maternal risk. There are several components involved in achieving this objective

1) Early, accurate estimation of gestational age
2) Identification of pregnancies at increased risk for maternal or fetal morbidity and mortality
3) Ongoing evaluation of maternal and fetal health status
4) Anticipation of problems, with intervention (if possible) to prevent or minimize morbidity
5) Health promotion, education, support, and shared decision-making

Prenatal care should be initiated in the first trimester, ideally by 10 weeks of gestation since some prenatal screening and diagnostic tests can be performed at this gestational age.

Early initiation of care is also useful to establish gestational age and early baseline measurements

(eg, weight [body mass index], BP, lab evaluation of patients with chronic diseases) and

provide early social service support and intervention, when warranted.

TIMING

- The percentage of pregnant patients who initiate prenatal care in the first trimester is one of the standard clinical performance measures used to assess the quality of maternal health care.
- more than 4 of 5 pregnant people in the highest income group received early antenatal care versus 1 of 4 pregnant people in the lowest income group.

CARE PROVIDER

- Standard one-on-one care
- Group prenatal care
- Subspecialty obstetric care
- Multidisciplinary care

COMPONENTS OF THE INITIAL PRENATAL VISIT

- History:
1) Medical/obstetric history
2) Family medical history
3) Past surgical history, including bariatric surgery
4) Menstrual and gynecologic history.
5) Current pregnancy history,
6) Travel to areas endemic for malaria, tuberculosis (TB), Zika virus.
7) Exposure to potentially toxic environmental agents
8) Psychosocial history

COMPONENTS OF THE INITIAL PRENATAL VISIT

- History
- Calculating the estimated date of delivery
- Physical examination: BMI ,BP, uterine size
- Ultrasound examination: Gestational age, Congenital anomalies
- Discussion of screening and testing for genetic abnormalities :Aneuploidy, Carrier screening, Consanguinity

Standard panel

- ABO and RhD type and antibody screen
- Hematocrit or hemoglobin, MCV, **ferritin**
- Documentation of rubella immunity
- Documentation of **varicella immunity**
- Urine protein, Urine culture
- Cervical cancer screening
- HIV
- Syphilis
- Hepatitis B
- **Hepatitis C**
- Chlamydia

Selective screening

- Thyroid function
- Type 2 diabetes
- Infection: Hepatitis A, Measles, Gonorrhea, Tuberculosis, Toxoplasmosis, Bacterial vaginosis, Trichomonas vaginalis, Herpes simplex virus, Cytomegalovirus, Zika ,COVID-19, Chagas disease
- Lead level

Edinburgh Postnatal Depression Scale

Name ___________________________________

Date: _______________

Number of Months Postpartum: _______

As you have recently had a baby, we would like to know how you are feeling. Please mark the answer which comes closest to how you have felt in the past **7 days**, not just how you feel today.

Here is an example, already completed:

I have felt happy:
- __ Yes, all the time
- X Yes, most of the time
- __ No, not very often
- __ No, not at all

This would mean "I have felt happy most of the time during the past week". Please complete the following questions in the same way.

In the past 7 days:

1. I have been able to laugh and see the funny side of things
   - __ As much as I always could 0
   - __ Not quite so much now 1
   - __ Definitely not so much now 2
   - __ Not at all 3

2. I have looked forward with enjoyment to things
   - __ As much as I ever did 0
   - __ Rather less than I used to 1
   - __ Definitely less than I used to 2
   - __ Hardly at all 3

3. I have blamed myself unnecessarily when things went wrong
   - __ Yes, most of the time 3
   - __ Yes, some of the time 2
   - __ Not very often 1
   - __ No, never 0

Edinburgh Postnatal Depression Scale

Name ________________________________

Date: ______________

Number of Months Postpartum: ______

As you have recently had a baby, we would like to know how you are feeling. Please mark the answer which comes closest to how you have felt in the past **7 days**, not just how you feel today.

Here is an example, already completed:

I have felt happy:

- __ Yes, all the time
- X Yes, most of the time
- __ No, not very often
- __ No, not at all

This would mean "I have felt happy most of the time during the past week". Please complete the following questions in the same way.

In the past 7 days:

1. I have been able to laugh and see the funny side of things

__	As much as I always could	0
__	Not quite so much now	1
__	Definitely not so much now	2
__	Not at all	3

2. I have looked forward with enjoyment to things

__	As much as I ever did	0
__	Rather less than I used to	1
__	Definitely less than I used to	2
__	Hardly at all	3

3. I have blamed myself unnecessarily when things went wrong

__	Yes, most of the time	3
__	Yes, some of the time	2
__	Not very often	1
__	No, never	0

Gestational diabetes

- Given the increasing frequency of type 2 diabetes, the author checks an A1C level to screen for diabetes as part of the routine prenatal laboratory studies at the initial prenatal visit.

Gestational diabetes

The ADA defines women at increased risk of overt diabetes based on body mass index (BMI) ≥25 kg/m2 (≥23 kg/m2 in Asian Americans) plus one or more of the following :

- Gestational diabetes mellitus in a previous pregnancy
- A1C ≥5.7 percent (39 mmol/mol), impaired glucose tolerance, or impaired fasting glucose on previous testing
- First-degree relative with diabetes
- High-risk race/ethnicity
- History of cardiovascular disease
- Hypertension or on therapy for hypertension
- HDL cholesterol level <35 mg/dL and/or a triglyceride level >250 mg/dL
- Polycystic ovary syndrome
- Physical inactivity
- Other clinical condition associated with insulin resistance (eg, severe obesity)

Gestational diabetes

- For women at increased risk of diabetes, a diagnosis of overt diabetes can be made at the initial prenatal visit if:

1) Fasting plasma glucose ≥126 mg/dL or
2) A1C ≥6.5 percent using a standardized assay or
3) Random plasma glucose ≥200 mg/dL and classic symptoms of hyperglycemia

Gestational diabetes

- is optimally performed at 24 to 28 weeks , as early as the first prenatal visit if there is a high degree of suspicion that the pregnant woman has undiagnosed type 2 diabetes
- women with RYGB avoid the standard 50 g glucose challenge test used to screen for gestational diabetes
- We, along with others, suggest following fasting and postbreakfast blood sugars for one week as an alternative
- A third option is to measure glycated hemoglobin (A1C) and assume overt diabetes is present if it is elevated (≥6.5 percent); women with a normal A1C should undergo screening as described
- Dumping syndrome typically does not occur in women who have undergone restrictive-type bariatric procedures such as gastric banding. These women can undergo standard testing for GDM.

Candidates for thyroid function screening

- Living in an area of moderate to severe iodine insufficiency
- Symptoms of hypothyroidism
- Family or personal history of thyroid disease

Personal history of:

Thyroid peroxidase (TPO) antibodies

Goiter

Age >30 years

Type 1 diabetes

Head and neck irradiation

Recurrent miscarriage or preterm delivery

Multiple prior pregnancies (two or more)

Morbid obesity (body mass index [BMI] ≥40 kg/m2)

Infertility

Prior thyroid surgery

Use of amiodarone, lithium, or recent administration of iodinated radiologic contrast agents

Approach tothyroid function screening

- If the serum TSH is between the trimester-specific lower limit of normal and 2.5 mU/L, most women require no further testing
- If the serum TSH is 2.5 to 4.0 mU/L), we measure TPO antibodies.
- If the TSH is >4 mU/L, we suggest measurement of free T4 to determine the degree of hypothyroidism.

Second and third trimesters

- the typical intervals for prenatal visits for nulliparous women with uncomplicated pregnancies are every 4 weeks until 28 weeks of gestation, every 2 weeks from 28 to 36 weeks, and then weekly until delivery

Pregnant people should be informed about the following:

- vaginal bleeding or change in vaginal discharge,
- leakage of fluid from the vagina
- decreased fetal activity (after perception of fetal activity has become established),
- Signs and symptoms of preterm labor
- Signs and symptoms of preeclampsia

ONGOING ASSESSMENTS

- Routine assessments at each prenatal visit typically consist of:

1. Measurement of blood pressure
2. Measurement of weight
3. Assessment of fetal growth: either trough measurement of fundal height or by ultrasound
4. Documentation of fetal heart rate.
5. Assessment of maternal perception of fetal activity (in the second and third trimesters).
6. Assessment of fetal presentation (in the third trimester).
7. Assessment of significant events since prior visit,
8. Review of signs and symptoms of potential pregnancy problems.

ONGOING ASSESSMENTS

- These simple, noninvasive, inexpensive assessments detect:

1) up to 50 percent of fetuses with growth abnormality,
2) prevent 70 percent of eclampsia by early detection of preeclampsia ,
3) and identify 80 percent of breech presentations prior to labor

PERIODIC ASSESSMENTS AND PROCEDURES

- First trimmester:

1) Red cell (RBC) antibodies
2) Current or past infection (eg, sexually transmitted infections [STI], bacteriuria, rubella immunity, varicella immunity)
3) Inherited disorders (eg, cystic fibrosis, fragile X, spinal muscular atrophy, hemoglobinopathy)
4) Fetal aneuploidy (eg, trisomy 21)
5) Thyroid disease
6) Elevated lead level

PERIODIC ASSESSMENTS AND PROCEDURES

- 15 to 24 weeks of gestation:

1) Screen for neural tube defects
2) Screen for trisomy 21
3) Screen for fetal anomalies
4) Screen for short cervix

PERIODIC ASSESSMENTS AND PROCEDURES

- 24 to 28 weeks of gestation

1) Screen for gestational diabetes
2) Administer anti-D immune globulin to RhD-negative women
3) Screen for anemia

PERIODIC ASSESSMENTS AND PROCEDURES

- 28 to 36 weeks of gestation:

1) Screen for sexually transmitted infections
2) Screen for fetal growth restriction
3) Determine the appropriate approach for antenatal fetal surveillance
4) Offer external cephalic version of noncephalic fetal presentations

PERIODIC ASSESSMENTS AND PROCEDURES

- 36 to 41 weeks of gestation:

1) Screen for group B beta-hemolytic streptococcus
2) Patient education in preparation for labor and delivery
3) Patient education regarding postpartum issues

Patient education and health promotion

- Pregnant people should be informed about the following:
- When to call the provider (eg, vaginal bleeding or change in vaginal discharge, leakage of fluid from the vagina, fever, pain, vomiting, acute shortness of breath, calf or leg pain, headache, visual changes, dysuria, pruritus, uterine contractions, crampy abdominal pain, decreased fetal activity [after perception of fetal activity has become established], fainting or dizziness, or personal concern about a change in health status).

Diet

- General principles of food safety in pregnancy include the following:

1) Wash fruits and vegetables before eating raw or cooking.
2) Avoid unpasteurized juice, cider, and milk
3) Avoid possibly contaminated water.
4) Avoid or limit consumption of fish with elevated levels of mercury
5) Wash hands with soap and water before and after food preparation.
6) Freezing meat for several days at subzero (0°F) temperatures before cooking greatly reduces the chance of infection

Vitamins and minerals

- A standard prenatal multivitamin with iron and folic acid satisfies the daily vitamin and mineral requirements of most pregnant people.
- The multivitamin should contain iron 15 to 30 mg to prevent iron deficiency
- The multivitamin should also contain folic acid 0.4 to 0.8 mg to reduce the risk of open neural tube defects
- Some experts advise high-dose vitamin D supplementation (eg, 2000 to 4000 international units/day) for pregnant people whose children are deemed at high risk of asthma

Healthy behaviors

- Use of seat belts and air bags
- Oral health
- Avoidance of alcohol, cigarettes, and misuse of drugs
- Exercise and physical activity :aerobic exercise and strength training, performed for 30 minutes daily, five to seven days per week.
- Hot tubs, saunas, and pools

Exercise and physical activity

- Activities that require jumping movements and quick changes in direction can stress joints and increase the risk of joint injury.
- Hormonal changes in pregnancy may cause ligament laxity; thus, joints are supported less effectively, especially in women with poor muscle mass
- Yoga is generally safe for pregnant women and their fetuses
- Exercises typically performed in a supine position should be avoided after the first trimester
- Prolonged or intense exercise can lead to dehydration and hyperthermia, which should be avoided

Exercise and physical activity

- most guidelines recommend pregnant women engage in at least 30 minutes of exercise at least five to seven days per week .
- pregnant women who have not been regular exercisers should follow a gradual progression of increasing the duration of exercise and can begin with as little as 10 minutes.

Exercise and physical activity

- There is no high quality evidence that bed rest reduces the risk of miscarriage, preterm birth, or preeclampsia or improves pregnancy outcome in multiple gestation or impaired fetal growth .
- Moreover, bed rest has known potential harms: It promotes loss of trabecular bone density, increases venous thromboembolism risk, produces musculoskeletal deconditioning, and places significant psychosocial strain on individuals and families .

Exercise and physical activity

- we agree with expert opinion that pregnant women at high risk for miscarriage or preterm birth (eg, multiple gestation) should limit high levels of exercise,physical activity, particularly activities involving strength training and heavy lifting
- very few conditions in pregnancy require strict or modified bed rest; these include preeclampsia with severe features and some cases of preterm prelabor rupture of membranes.

Precautions against infection

- Immunization:

1) COVID-19 :pregnancy itself is associated with an increased risk of severe infection.
2) Influenza
3) Tetanus, diphtheria, pertussis

- Preventive measures for other infections

1) Toxoplasmosis
2) Cytomegalovirus
3) Varicella
4) Parvovirus
5) Zika
6) Infections associated with pets
7) Listeria and other foodborne infections

Immunization

- All women who are pregnant or might be pregnant during the influenza season should receive the inactivated influenza vaccine as soon as it becomes available and before onset of influenza activity in the community, regardless of their stage of pregnancy .
- Vaccination after onset of influenza activity is still beneficial as long as influenza viruses are circulating.

Immunization

- Td immunization complete-single dose of Tdap, ideally during the early part of the 27 to 36 week gestational age range .
- Tdap is indicated **in each pregnancy**, even if the woman has a previous history of pertussis or vaccination, and even if consecutive pregnancies occur within 12 months.

Immunization

- No, incomplete, or unknown immunization against tetanus and diphtheria :
- Pregnant women who have not received three doses of a vaccine containing tetanus and diphtheria toxoids (Td) should undertake or complete the series of three vaccinations.
- The preferred schedule in pregnant women is at time 0, 4 weeks later, and at 6 to 12 months after the initial dose.
- To also provide protection against pertussis, at least one of these doses should be with Tdap; ideally, Tdap is given during the early part of the 27 to 36 week gestational age range.

Immunization

- Pregnant women are the only population in whom repeated Tdap immunization is recommended
- The ACIP recommendation for vaccination between 27 and 36 weeks of gestation (and preferably during the earlier part of this period) is intended to maximize both maternal antibody response and passive antibody transfer to the infant .

Sleep position

- supine position in late pregnancy can decrease cardiac output and uterine perfusion due to aortocaval compression from the gravid uterus
- pregnant people whose objectively measured sleep position was supine at least 50 percent of the time at 22 to 30 weeks were not significantly more likely to have the composite adverse outcome than those in the supine position ≤50 percent of the time (composite adverse outcome: stillbirth, small for gestational age newborn, and gestational hypertensive disorders)
- the frequency of stillbirth in women sleeping in the non-left lateral and left lateral position was 5/4667 (0.1 percent) and 13/3511 (0.4 percent), respectively (OR 0.27, 95% CI 0.09-0.75), which should reassure women that they can sleep in the positions in which they are most

Common patient concerns

- Risk of birth defects and inherited disorders
- Employment issues
- Sexual activity
- Travel, Airline travel
- Shortness of breath
- Hair dyes and other cosmetic products
- Stretch marks and other normal changes of skin, nails, and hair
- Tattoos and body piercing

Tattoos and body piercing

- Potential risks of getting a new tattoo in pregnancy is infection
- Pregnant people should avoid getting a tattoo during pregnancy but can be reassured of the absence of proven pregnancy risks if the procedure is performed before they are aware of their pregnancy.
- Metal body jewelry can conduct electric current if electrosurgery is performed

Management of common discomforts

- Nausea and vomiting
- Gastroesophageal reflux disease
- Constipation
- Hemorrhoids
- Rhinitis and epistaxis
- Gingivitis
- Difficulty sleeping

Management of common discomforts

- Headache
- Back pain
- Pelvic joint pain
- Leg cramps and restless legs syndrome
- Peripheral edema
- Varicose veins
- Diarrhea
- Urinary frequency and nocturia

Hemorrhoids

- Constipation exacerbates these symptoms; therefore, adequate hydration and a diet replete with fiber are advisable.
- Treatment for relief of symptoms consists of conservative medical management using local application of anti-inflammatory, antipruritic, and local anesthetic preparations.
- Recurrent and severe hemorrhoids usually require surgical treatment, typically hemorrhoidectomy, which can be performed safely during pregnancy if necessary

gastroesophageal reflux disease (GERD)

- lifestyle and dietary modification
- persistent symptoms, pharmacologic therapy should begin with antacids followed by sucralfate.
- fail to respond, similar to nonpregnant patients, histamine 2 receptor antagonists (H2RAs)
- and then proton pump inhibitors (PPIs) should be used to control symptoms

Thank you