SECOND TRIMESTER PREGNATAL VISITS

Overview
The second trimester is an important time in pregnancy as it offers the opportunity to discuss prenatal screening and for assessment of growth of the fetus.

Timing: For Uncomplicated Pregnancies, q4 Weeks Until 28 Weeks
Assess at Every Visit:
History: GA, history of present pregnancy: fetal movements, uterine bleeding, leaking, cramping
Physical exam: BP, weight, SFH, Leopold's maneuvers for lie, position and presentation of fetus
SFH
12 weeks: Uterine fundus at pubic symphysis
20 weeks: Fundus at umbilicus SFH should be within 2 cm of GA between 20 and 37 weeks
37 weeks: Fundus at sternum

Reasons for measuring small for dates:                   Reasons for measuring Large for dates:
Date miscalculation                                    Date miscalculation
IUGR                                                    Multiple gestation
Fetal Dmise                                             Polyhydramnios
Oligohydramnios

Investigations:                                        Investigations: Urinalysis for glucosuria, ketones, proteinuria
Fetal heart rate starting at 12 weeks using Doppler U/S

COMPARISON OF FTS, MSS AND IPS (Prenatal Genetic Screening should be offered to all pregnant women regardless of age)

<table>
<thead>
<tr>
<th>First Trimester Screen (FTS)</th>
<th>Maternal Serum Screen (MSS)</th>
<th>Integrated Prenatal Screen (IPS)</th>
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<tbody>
<tr>
<td>11-13w6d</td>
<td>15-20w6d</td>
<td>NT (done on dating U/S)</td>
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<tr>
<td>Measures:</td>
<td>Measures:</td>
<td>FTS at 11-13w6d</td>
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<tr>
<td>NT on U/S</td>
<td>MSSAFP</td>
<td>MSS + Inhibin A @ 15-19w6d</td>
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<tr>
<td>BhCG</td>
<td>BhCG</td>
<td></td>
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<tr>
<td>PAPP-A</td>
<td>Estriol or uE3</td>
<td>Risk estimate for</td>
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<tr>
<td>Risk estimate for</td>
<td>Risk estimate for</td>
<td>oNTD, Down Syndrome, Trisomy 18</td>
</tr>
<tr>
<td>1. Down syndrome:</td>
<td>2. Down syndrome:</td>
<td>- pts with + screen should be</td>
</tr>
<tr>
<td>†NT, †BhCG, †PAPP-A</td>
<td>†MSAFP, †BhCG, †uE3</td>
<td>offered U/S or amniocentesis</td>
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<tr>
<td>*Does not measure risk of oNTD and should be combined with MSSAFP at 16wks</td>
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<tr>
<td>-useful for pt who wants results in 1st trimester</td>
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<tr>
<td>-more accurate estimate of Down syndrome risk than MSS</td>
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<tr>
<td>-pts with + screen should be offered CVS (10-12wks) or amniocentesis (15-16 wks)</td>
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</tbody>
</table>

Compared to CVS, Amniocentesis has higher accuracy of prenatal cytogenetic diagnosis (99.8% vs. 97.5%) and lower risk of spontaneous abortion (0.5% vs. 1-2%).

DDx of increased MSSAFP
• Incorrect GA
• >1 fetus (e.g. twins)
• Fetal demise
• oNTD
• Abdominal wall defects (e.g. omphalocele)

DDx of decreased MSSAFP
• Incorrect GA
• Gestational trophoblastic neoplasia
• Missed abortion
• Chromosomal anomalies
• Maternal DMI/DMII

Risk Factors for Neural Tube Defects
• Genetics: family history of NTD (risk of having second child with NTD is increased to 2-5%), consanguinity, chromosomal (characteristic of trisomy 13, 18, and 21)
• Race: European Caucasians > than African Americans, 3-fold higher in Hispanics
• Insufficient vitamins: zinc and folate
• Maternal chronic disease (e.g. diabetes)
• Maternal use of anti-epileptic drugs (*general population risk for NTD is 0.1%)

Dr. Michael Evans developed the One-Pager concept to provide clinicians with useful clinical information on primary care topics.
Fetal Growth and Anatomy Ultrasound
Routine done at 18-20 weeks GA (margin of error ± 7 days). Helps determine:
- Number of Fetuses
- GA (if no prior U/S)
- Location of placenta and cervical length
  Approx. 5% of pregnancies have a low lying placenta on U/S but <0.5% have placenta previa at term
  If low-lying placenta repeat U/S for placental location between 30 to 32 weeks.
- Fetal anomalies (“soft markers for chromosomal anomalies”)

Prenatal Fetal Monitoring
Fetal Movements
- Generally first noticed at 18-20 wks in primigravidas; can occur 1-2 wks earlier in multigravidas
- If mother concerned about decreased movement: mother chooses a time when fetus is normally active to count movements (usually recommended after 28 wks)
  - If <6 movements in 2 hours, try drinking juice, eating, changing position or moving to a quiet room and count for another 2 hours
  - If decreased movement persists, notify MD
    Differential dx of decreased fetal movements: death of fetus, amniotic fluid decreased, sleep cycle of fetus, hunger/thirst

Gestational Diabetes Screen
Routine screening unless patient is low risk (maternal age <25, Caucasian, prepregnant BMI <27, no previous history of GDM or glucose intolerance, no family history of diabetes in first degree relative, no history of GDM associated adverse pregnancy outcome)
- @ 24-28 wks GA
  1 hour, 50g Oral Glucose Challenge Test, not fasting
    PG<7.8 mmol/L= no GDM
    PG≥7.8-10.2mmol/L = further investigation with 2 hour 75 g Oral Glucose Tolerance Test
    PG≥10.3= GDM
  2 hour, 75g Oral Glucose Tolerance Test, fasting
   FPG≥5.3 mmol/L
   PG 1-hour≥10.6 mmol/L
   PG 2-hour ≥8.9 mmol/L
    2/3 of the above= GDM
    1/3 of the above= impaired glucose tolerance

References can be found online at http://www.dfcm.utoronto.ca/programs/postgraduateprograme/One_Pager_Project_References.htm