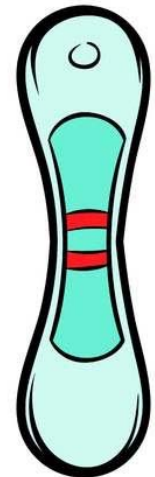


Approach to First Trimester Antenatal Care

“I’m Pregnant – Now What?”

October 26, 2018
Dr. Amber Dudar FRCSC

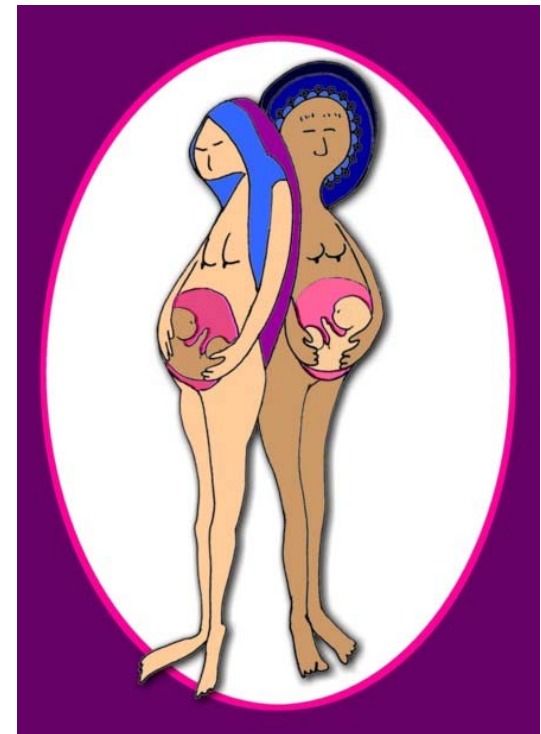


Disclosures

- I have no relationships with for-profit or not-for-profit organizations

Learning Objectives

- Carry out an antenatal history using the Ontario Antenatal Record (OAR)
- Determine what antenatal testing should be offered and when
- Identify pregnant women with risk factors that require early medical intervention and appropriate consultation



Goals of Antenatal Care:

- Early accurate estimation of gestational age and calculation of EDC
- Identification of high risk pregnancies at risk for maternal and/or fetal harm
- Ongoing evaluation of maternal and fetal well being
- Health promotion, education and support



Importance of First Trimester Care

- Ensure timely access for all populations (low SES, incarcerated, immigrants, no family physician)
- In Thunder Bay – pts can self refer to Deb Bishop (Maternity Centre) and to midwifery
- Counsel regarding options in unwanted pregnancies
- Establish baseline data on patient – BMI, BP, Bloodwork



“New” Ontario Antenatal Record

- Investigations required as standard of care
- 2017 Version is the 5th revision
- Serves as a care map for pregnancy, birth and the very early newborn period
- Goal to support evidence-informed care and shared decision making



History Taking at the First Antenatal Visit

Highlights not to miss:

- Obstetrical History
- Past Medical (HSV, Varicella)
- Past Surgical - previous uterine surgery (LEEP, full thickness incision to uterus/perforation)
- Travel (endemic areas for Malaria, TB, Zika)



- **Medications** – safety, potential safer alternatives
 - dose adjustment (Lithium, anti-seizure, thyroid meds)
 - folic acid supplementation (Folic Acid 1 vs 4-5 mg)
- **Smoking/Drug Abuse** *“Do you ever use alcohol or drugs?”*
- **Family History** – (CF, Fragile X, Spinal Muscular Atrophy, Tay Sachs, Hemoglobinopathies – early genetics referral)
- **Work** – exposure to chemical/environmental hazards

- Social Situation – employed, supportive partner/family, housing, food, transportation

"Do you ever have difficulty making ends meet at the end of the month?"

- Screen for mental health and intimate partner violence

"How would you describe your relationship with your partner?"

"What do you think the relationship will be like after the baby arrives?"

"Within the past year - or since you have been pregnant - have you been hit, slapped, kicked or otherwise physically hurt by someone?"

Physical Examination

- BP (if elevated consider baseline BW – Cr, Lytes, Pr/Cr ratio, LFTs, EKG)
- Weight/BMI – discuss weight gain, refer dietician
- Pelvic/Abdominal Exam – if uterus palpable/larger than expected order U/S ASAP (rule out molar or multiple pregnancy)

Routine Investigations

- CBC (Hb and Plt), MCV
- Urine C & S, Pap Smear (only if due)
- Chlamydia and gonorrhoea (urine or cervical)
- HBsAg, VDRL, HIV, Rubella titre
- Blood ABO Group, Rh factor, and antibody screen
- Varicella antibody if history uncertain
- Ferritin if at risk for anemia



Potential Additional Infectious Screening

- Hep C (high risk individuals)
- TB (TB skin test safe and accurate)
- Parvovirus (early childhood educators)
- Toxoplasmosis (consumption raw meat, exposure to soil or cat litter)
- Zika (based on travel history)

- Recommend and provide influenza vaccine prior to and during flu season at any gestational age

TSH

- No current guideline addressing thyroid screening
- Routine thyroid function testing is not recommended in asymptomatic patients
- Possible connection between untreated overt maternal hypothyroidism and neuropsychological impairment in the offspring
- If hypothyroidism or subclinical hypothyroidism diagnosed before or during pregnancy, treatment adjusted to achieve a TSH level trimester specific
 - Prior to pregnancy: TSH level < 2.5 mU/L
 - 1st Trimester: TSH between 0.5-2.5 mU/L
 - 2nd and 3rd Trimesters: TSH between 0.5- 3.0 mU/L

Risk factors for Thyroid Disease (pregnant or anticipating pregnancy)

- Age > 30 years
- > 2 prior pregnancies
- Hx of pregnancy loss, preterm delivery, or infertility
- Type 1 diabetes or other autoimmune disorders
- Morbid obesity (BMI \geq 40 kg/m²)
- History of hypothyroidism/hyperthyroidism or current symptoms/signs of thyroid dysfunction
- Family history of autoimmune thyroid disease or thyroid dysfunction (1st degree relative)

RF for Thyroid Disease (continued)

- History of head or neck radiation or prior thyroid surgery
- Known thyroid peroxidase antibody positivity or presence of a goitre
- Currently receiving levothyroxine replacement
- Use of amiodarone or lithium, or recent administration of iodinated radiologic contrast

Early Diabetes Screening

HBA1C or early 50 g GCT if at risk for Type 2 Diabetes:

- Obese/PCOS/Infertility secondary to anovulation
- Previous GDM
- Previous macrosomic babe



Ethnicity/Family History Considerations

Hemoglobinopathy screening

- Asian, African, Middle Eastern, Mediterranean, Hispanic, Caribbean

Tay-Sachs disease screening

- Ashkenazi Jewish, French Canadian, Acadian, Cajun

Ashkenazi Jewish Panel

Consider Referral to Genetics if family history of:

- CF, muscular dystrophy, chromosomal disorders, consanguinity



First Trimester Ultrasound

- Confirm location of pregnancy (hx of ectopic, risk factors)
- Accurately date pregnancy
- Recommend 1st trimester ultrasound for ALL women ideally between 8-13 wks
- Estimate due date using earliest u/s beyond or equal to 7 wks (spontaneous conceptions)
- Perform early dating ultrasound prior to nuchal translucency scan for women with uncertain menstrual dates

SOGC Clinical Practice Guideline No. 303, Feb 2014

- When performed with quality and precision, ultrasound alone is **more accurate** than a “certain” menstrual date for determining gestational age in the first and second trimesters (≤ 23 weeks) in spontaneous conceptions, and it is the **best method** for estimating the delivery date (II)
- Routine U/S in first trimester reduces post term inductions
- If more than one T1 scan, the earliest ultrasound with a crown-rump length equivalent to at least 7wks (or 10 mm) should be used to determine the GA and subsequent EDC (III-B)

Options for Genetic Screening

- Offer prenatal genetic screening to all women

Options:

- Enhanced First Trimester Screening (eFTS) - combines a nuchal translucency scan and first trimester PAPP-A, AFP and hCG (+/- PIGF) (between 11 - 13+6wks)
- IPS (replaced by eFTS)
- MSS between 15-20+6wks, AFP between 15-20+6wks (2nd Trimester U/S superior screening for neural tube defects)
- Cell-Free Fetal DNA (NIPT)
- Chorionic villus sampling (GA 10-12 wks) and/or amnio (GA>15 wks)

Funded Patients for NIPT/Panorama

Singleton pregnancy and one of the following:

- A maternal multiple marker screening test (eg. eFTS/IPS/Quad etc.) positive for aneuploidy
- Women of advanced maternal age, defined as ≥ 40 yo at EDC
- Fetal nuchal translucency (NT) ≥ 3.5 mm
- Prior pregnancy history of aneuploidy or previous child with aneuploidy

Special Situations coverage if seen by MFM/Genetics

Potential

- Risk of aneuploidy for trisomy 21, 18 or 13 > than that of a positive maternal multiple marker screen (presence of 1 or more soft marker)
- NIPT for sex chromosome determination (at least one of the following):
 - Risk of a sex-limited disorder
 - Ultrasound findings suggestive of either a sex chromosome aneuploidy
 - Ultrasound findings suggestive of a disorder of sex determination(DSD)

Diet, Vitamins and Supplements

- Discuss dietary restrictions (eg. vegan, lactose intolerance)
- Ask if poverty/other circumstances impact access to healthy food and make referrals as appropriate
- Discuss food hygiene and implications of food borne infections
- Consider maternal GI malabsorption conditions: Crohn's or active Celiac disease, gastric bypass surgery, advanced liver disease, dialysis, alcohol overuse (may need earlier referral)
- Health Canada recommends a daily PN Vit supplement with 16-20 mg iron

Folic Acid Requirements to Prevent Congenital Anomaly – SOGC No. 324, May 2015

Congenital anomalies which may be sensitive to folate:

- Oral facial cleft and palate
- Certain cardiac defects
- Certain urinary tract anomalies
- Limb reduction defects

LOW RISK - require a diet of folate-rich foods and a daily multivitamin with **0.4 mg folic acid** for 2-3 mo before conception, throughout the pregnancy, and for 4-6 wks postpartum or as long as breast-feeding continues (II-2A)

Folic Acid

MODERATE RISK

- require a diet of folate-rich foods and daily multivitamin containing **1 mg folic acid** at least 3 months before conception and until 12 weeks' GA (1-A), reduce to 0.4 – 1 mg for duration of pregnancy and postpartum (II-2A)

Moderate Risk Group

- Personal or family history of other folate sensitive congenital anomalies (cardiac, limb, cleft palate, urinary tract, congenital hydrocephaly)
- Family history of NTD in 1st or 2nd degree relative
- Maternal Diabetes (Type 1 or 2)
- Teratogenic medications (w/ folate inhibition): anticonvulsant medications (carbamazepine, valproic acid, phenytoin, primidone, phenobarbital), metformin, methotrexate, sulfasalazine, triamterene, trimethoprim (as in cotrimoxazole), and cholestyramine

Folic Acid

HIGH RISK

- require a diet of folate-rich foods and a daily multivit with **4.0 mg folic acid** for at least 3 months before conception and until 12 weeks' gestational age, reduce to multivit with 0.4-1.0 mg of folic acid for duration of pregnancy and postpartum (I-A)

High Risk Group

Recommend Folic Acid **4 mg/d** for women with:

- multiples
- obesity BMI>35
- pre-existing diabetes (metformin may inhibit folate absorption)
- previous infant with neural tube defect
- patient or partner with neural tube defect
- taking anticonvulsants, sulfasalazine, trimethoprim
- daily compliance problematic

Calcium

- Assess the adequacy of dairy products or other calcium sources in the normal diet
- Eat Right Ontario and Health Canada recommend 1000 mg/d of calcium during pregnancy with a higher dose of 1300 mg/d of calcium for those under 19
- The SOGC recommends calcium supplementation of at least 1 g/d, orally, for pregnant people with low dietary intake of calcium (<600 mg/d) who are at high risk of preeclampsia

SOGC Guideline No. 307, May 2014

Vitamin D

- Recommended total daily intake from diet and supplementation is 15 mcg (600 IU)

Patients/clients at risk for low vitamin D stores include those who:

- Have darker skin tones
- Live in northern latitudes
- Routinely cover their skin for cultural reasons
- Have diets low in vitamin

Diagnosis, Evaluation, and Management of the Hypertensive Disorders of Pregnancy: Executive Summary

SOGC No. 307, May 2014

- Women should be screened for clinical risk markers of preeclampsia from early pregnancy (II-2C)

Patients Potentially at Risk for Pre-Eclampsia

PMHX:

- **Previous Preeclampsia**
- **APLAS**
- **Pre-existing HTN or booking dBP \geq 90 mmHg**
- **Pre-existing Renal Disease or booking proteinuria**
- **DM**
- Lower maternal birthweight +/- PTB
- Heritable thrombophilia
- \uparrow triglycerides
- Non-smoking
- Cocaine and metamphetamine use
- Previous SA at \leq 10 wks with same partner

Current Pregnancy RF for Preeclampsia in T1

- Age ≥ 40
- Family Hx of Preeclampsia (mother or sister)
- Family Hx of early-onset cardiovascular disease
- **Multiple Pregnancy**
- Obese
- First ongoing pregnancy
- New Partner
- Short Duration of relationship with partner
- ART
- Inter-pregnancy interval ≥ 10 yrs
- Booking BP sBP ≥ 130 and d BP ≥ 80
- Vag Bleeding in T1
- GTD
- Abnormal PAPP-A or Free BhCG

ASA Supplementation

- Low-dose acetylsalicylic acid and calcium supplementation (1 g/d) for women with low calcium intake are recommended for prevention of preeclampsia in women at high risk (I-A)

ASA should be:

- taken in a low dose (75–162 mg/d) (III-B)
- administered at bedtime (I-B)
- initiated after diagnosis of pregnancy but before 16 wks (I-B) considered for continuation until delivery (I-C)

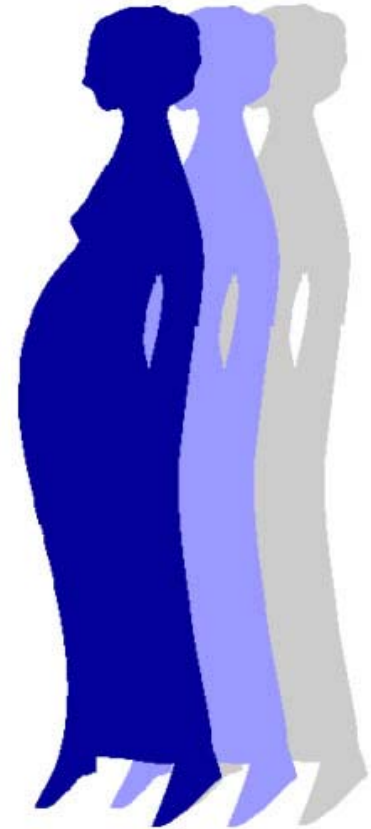
SOGC Guideline No. 307, May 2014

Special Populations – Early Referral

- GI conditions (Crohn's and Ulcerative Colitis)
- Positive Autoimmune Ab (SLE, Sjogren's) - - need early monitoring from 16 wks
- Epilepsy
- Multiples
- Previous loss secondary to cervical incompetence (elective cerclage done between 12-14 wks)

Special Populations (Early Referral)

- Previous PTB (consider screening vaginal swabs BV, Trich, Ureaplasma/Mycoplasma)
- Previous Pre-eclampsia
- Previous Preterm Birth/Previous LEEP
- Recurrent SA (≥ 3 losses)
- DM 2
- Previous VTE



Summary

The first few antenatal visits can be overwhelming.

- Order an Ultrasound
- Order Basic Routine Investigations (+/- TSH, HBA1c, Hep C etc.)
- Counsel on Diet/Vitamins/Smoking/Drugs
- Offer Screening Tests
- Start ASA 81 mg +/- Calcium
- Watch for potential high risk patients that need early referral

