CHRONIC HYPERTENSION

The approach to chronic hypertension diagnosed prior to pregnancy is outlined. Preexisting hypertension is defined as systolic pressure ≥140 mmHg and/or diastolic pressure ≥90 mmHg that antedates pregnancy, is present before the 20th week of pregnancy, or persists longer than 12 weeks postpartum. There is considerable variation in data on this topic as many investigators use different levels of blood pressure elevation to diagnose hypertension. It is clear that having hypertension prior to pregnancy predisposes a woman to numerous conditions: 1.) Superimposed Preeclampsia, 2.) Preterm birth, 3.) Intrauterine growth restriction, and 4.) Placental abruption. [1]

**Superimposed Preeclampsia**- this is where a pregnant woman develops preeclampsia or even eclampsia during the pregnancy. This risk is two to four times higher in women with chronic hypertension and increases with severity of baseline high blood pressure. Preeclampsia involves elevation of the blood pressure and development of proteinuria after 20 weeks gestation. Preeclampsia is a disorder of the placenta and there is no treatment other than delivery.

**Preterm Birth**- this is where a woman delivers prior to 37 weeks gestational age. This can result on its own or as a result of circumstances causing physician’s to induce labor because of severity of disease.

**Intrauterine Growth Restriction**- this is defined as growth less than the 5th or 3rd percentile for gestational age. In association with hypertensive disorders this is caused by pre-existing vascular or renal disease or by abnormalities of the placenta.

**Placental Abruption**- this involves premature separation of the placenta from the wall of the uterus. When a large portion of the placenta separates this can be catastrophic and require immediate delivery.

**Workup**

History and physical examination are both required with determination of vital signs and simultaneous palpation of both brachial and femoral pulses (to rule out coarctation of the aorta). [2] Additional evaluation will include 24-Hour Urine Collection (creatinine clearance rate and Total Protein), Urinalysis, Urine Culture and Sensitivity, Lipid Panel, Liver Function Tests (alt, ast, alkaline phosphatase and LDH), Electrolytes, BUN, Createnine and Uric Acid. An EKG will also be ordered. [3]

**Treatment**

Treatment of chronic hypertension in pregnancy remains controversial. Most authorities do not believe women with mild chronic hypertension (systolic 140 to 159 or diastolic 90 to 99 mmHg) require treatment and, hence, we will not start therapy in early pregnancy if the patient is not already on it at the first prenatal visit. [4] Women with mild-range chronic hypertension already on drug therapy may continue it in pregnancy.

Certain women with mild hypertension appear to be at greater risk of maternal or fetal complications and may benefit from antihypertensive therapy. Sibai, and other experts have suggested therapy for women with:
Hypertension resulting from renal disease, collagen vascular disease or coarctation of the aorta (secondary hypertension)

- End-organ damage (eg, ventricular dysfunction, retinopathy)
- Dyslipidemia
- Maternal age over 40 years old
- Microvascular disease
- History of stroke
- Previous perinatal loss
- Diabetes

Women with more significant blood pressure elevation (diastolic pressures of 95 to 99 mmHg, systolic pressures ≥150 mmHg, or signs of hypertensive end-organ damage) may benefit from anti-hypertensive therapy. Women with Severe hypertension (blood pressure ≥160/100 mmHg) should be treated to protect the mother from serious complications, such as stroke, heart failure, or renal failure.

A reasonable goal of therapy in women without end-organ damage is systolic pressure between 140 and 150 mmHg and diastolic pressure between 90 and 100 mmHg. [1,5] For women with end-organ damage, it is desirable to keep the blood pressure below 140/90 mmHg. [5]

Drugs most commonly used for chronic hypertension on pregnancy include alpha methyl dopa (Aldomet) or labetalol (Trandate). Because some antihypertensive drugs are not safe in pregnancy, switching to one of these drugs either at the pre-conceptional counseling visit or the first prenatal visit will be done for women who we believe will benefit from continuation of anti-hypertensive therapy in pregnancy.

**Surveillance**

Here at DWC we recommend close surveillance of pregnancies complicated by chronic hypertension. Regular office visits with B.P. monitoring and checking urine for protein are essential. A baseline measurement of renal function is begun immediately in most cases; this involves 24-hour urine collection and determination of both creatinine clearance rate and total protein. Maternal blood testing for uric acid, liver functions, BUN and creatinine are also conducted.

Fetal well being is tested on a regular basis often beginning between 28 and 32 weeks gestational age. This involves twice weekly Non Stress Test (NST) and weekly ultrasound for evaluation of Amniotic Fluid and placenta appearance. Dopplers of the middle cerebral artery (MCA) and uterine artery (UA) are also done.

**Delivery**

Mild chronic hypertension in pregnancy does not require early delivery and these women are managed expectantly. Women with superimposed preeclampsia are often delivered early despite there being no Level 1 data to support this practice.

Patients with chronic hypertension should learn as much about the condition to help maximize their care and have the healthiest baby possible. WebMD or UpToDate are Internet resources with excellent information on this condition.
References

DWC CHRONIC HYPERTENSION EVALUATION

____ 24-Hour Urine Collection: order creatinine clearance rate (ml / minute) and Total Protein (mg in 24 hours)
____ Lipid Panel
____ Liver Function Tests (alt, ast, alkaline phosphatase and LDH)
____ Electrolytes, BUN and Creatinine
____ Uric Acid
____ EKG

____ Ophthalmology consultation
____ Cardiology Consultation