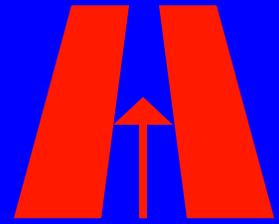




# Pathophysiology



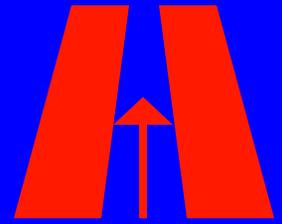
**The cause of preeclampsia is unknown.**

**The maternal disease is characterized by**

- **Vasospasm**
- **Activation of the coagulation system**
- **Perturbations in humoral and autacoid systems related to volume and blood pressure control**
- **Oxidative stress and inflammatory-like responses**
- **Pathologic changes that are ischemic in nature**



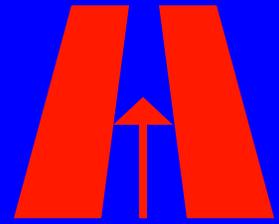
## Pathophysiology (cont.)



**Of importance, and distinguishing preeclampsia from chronic or gestational hypertension, is that preeclampsia is more than hypertension; it is a systemic syndrome, and several of its “nonhypertensive” complications can be life-threatening when blood pressure elevations are quite mild.**



# Pathophysiology (cont.)

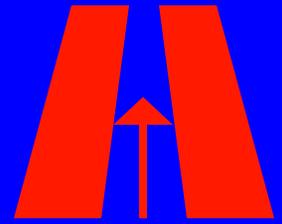


**Heart:** Generally unaffected; cardiac decompensation in the presence of preexisting heart disease.

**Kidney:** Renal lesions (glomerular endotheliosis); GFR and renal blood flow decrease; hyperuricemia; proteinuria may appear late in clinical course; hypocalciuria; alterations in calcium regulatory hormones; impaired sodium excretion; suppression of renin angiotensin system.



# Pathophysiology (cont.)



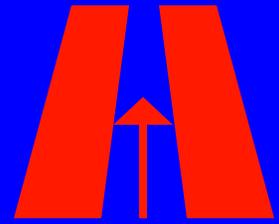
**Coagulation System:** Thrombocytopenia; low antithrombin III; higher fibronectin.

**Liver:** HELLP syndrome (hemolysis, elevated ALT and AST, and low platelet count).

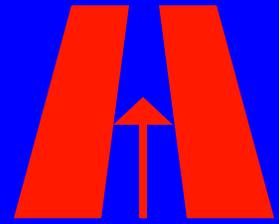
**CNS:** Eclampsia is the convulsive phase of preeclampsia. Symptoms may include headache and visual disturbances, including blurred vision, scotomata, and, rarely, cortical blindness.



# Differential Diagnosis



- Documentation of HBP before conception or before gestational week 20 favors a diagnosis of **chronic hypertension** (essential or secondary).
- HBP presenting at midpregnancy (weeks 20 to 28) may be due to **early preeclampsia, transient hypertension**, or unrecognized **chronic hypertension**.



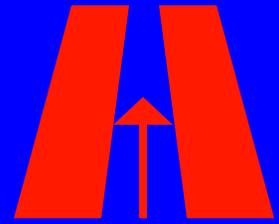
# Laboratory Tests

## High-risk patients presenting with normal BP:

- Hematocrit
- Hemoglobin
- Serum uric acid
- If 1+ protein by routine urinalysis (clean catch) present obtain a timed collection for protein and creatinine
- Accurate dating and assessment of fetal growth
- Baseline sonogram at 25 to 28 weeks
- Platelet count
- Serum creatinine



## Laboratory Tests (cont.)

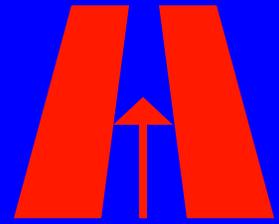


**Patients presenting with hypertension before gestation week 20:**

- Same tests as described for high-risk patients presenting with normal BP
- Early baseline sonography for dating and fetal size



## Laboratory Tests (cont.)



### Patients presenting with hypertension after midpregnancy:

- Quantification of protein excretion
- Hemoglobin and hematocrit and platelet count
- Serum creatinine, uric acid, and transaminase level
- Serum albumin, LDH, blood smear, and coagulation profile