



***In the name  
of God***




# **HTN IN PREGNANCY**



# Renin-Angiotensin System

- Plasma renin substrate levels are increased as a consequence of the effects of estrogen on the liver.
- Renin levels are also increased, and increased renin activity results in increased levels of angiotensin II, which lead to an 8-fold to 10-fold increase in aldosterone production and serum aldosterone levels.
- The aldosterone levels peak in mid-pregnancy and are maintained until delivery.


# Renin-Angiotensin System

- The elevated aldosterone levels do **not lead to** an increase in **serum sodium**, a decrease in serum **potassium**, or an **increase in blood pressure**, which again may reflect the high **progesterone** concentrations, which are capable of displacing aldosterone from its renal receptors.

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- The **prevalence** of hypertension in women of childbearing age has steadily **increased** over time and is now a common problem encountered by obstetric providers.
  - HTN : an SBP >140 mmHg and DBP of >90 mm Hg
  - Sever HTN : SBP >160 mmHg and DBP of >100 mm Hg



**The goal of pharmacologic treatment should be a DBP of less than 90 mm Hg and an SBP less than 140 mm Hg.**



14.19 In pregnant patients with diabetes and **chronic hypertension**, a blood pressure target of **110–135/85** mmHg is suggested in the interest of reducing the risk for accelerated maternal hypertension and minimizing impaired fetal growth.

# TREATMENT

- **Hydralzine** may be considered in the **acute management** of hypertension in pregnancy or severe preeclampsia.

Antihypertensive drugs known to be effective and safe in pregnancy include **methyldopa**, **nifedipine**, **labetalol**, **diltiazem**, **clonidine**, and **prazosin**.

**Methyldopa** is the best studied antihypertensive medication in pregnancy and is safe for use at any point in gestation.



# TREATMENT

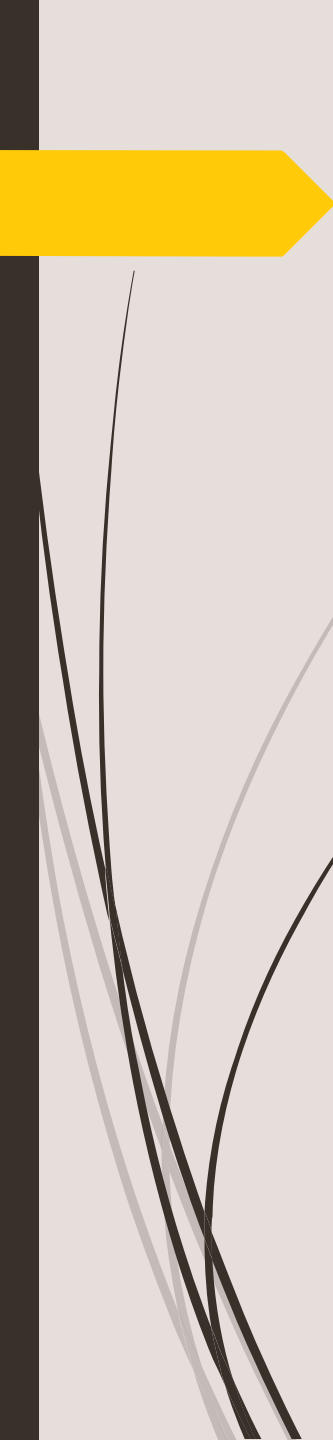
- **Atenolol** is **not recommended**, but other b-blockers may be used, if necessary. But these medications have been associated with an increased risk of fetal growth restriction.

Diuretics are **not recommended** for blood pressure control in pregnancy but may be used during latest age pregnancy if needed for volume control.

# TREATMENT

\_During pregnancy, treatment with **ACE** inhibitors, **angiotensin receptor blockers**, and **spironolactone** are contraindicated as they may cause fetal damage (they may cause fetal renal dysplasia, oligohydramnios, pulmonary hypoplasia, and intrauterine growth restriction).

-Patients on these medications should be **switched** to alternative agents prior to or in the first trimester of pregnancy.



\_The American College of Obstetricians and Gynecologists also recommends that postpartum patients with gestational hypertension, preeclampsia, and superimposed preeclampsia have their blood pressures observed for 72 h in the hospital and for 7–10 days postpartum.



*Thanks for  
your attention*