MANAGEMENT – PREECLAMPSIA RX: DELIVERY

Hypertension (BP 159/109 mmHg or less)
- Continue antenatal antihypertensive treatment.
- Measure BP hourly.
- Determine the need for haematological and biochemical monitoring according to criteria from antenatal period.
- If BP stable do not routinely limit duration of second stage.

Severe hypertension (BP 160/110 mmHg or more)
- Continue antenatal antihypertensive treatment.
- Measure BP every 15 to 30 minutes until BP is less than 160/110 mmHg.
- If BP controlled within target ranges do not routinely limit duration of second stage.
- If BP does not respond to treatment advise operative or assisted birth.

Features of severe pre-eclampsia
- Severe hypertension that does not respond to treatment.
- Ongoing or recurring severe headaches.
- Visual scotomata.
- Nausea or vomiting.
- Epigastric pain.
- Oliguria and severe hypertension.
- Progressive deterioration in laboratory blood tests (such as rising creatinine, or liver transaminases or falling platelet count).
- Failure of fetal growth or abnormal doppler findings.

→ See visual summary 7 on severe hypertension, severe pre-eclampsia and eclampsia in critical care

Medical management
- Measure BP hourly in women with hypertension, and every 15 to 30 minutes until BP is less than 160/110 mmHg in women with severe hypertension
- Treat women admitted to critical care during pregnancy or after birth immediately with one of:
  - labetalol (oral or intravenous)
  - oral nifedipine
  - intravenous hydralazine
- Continue appropriate ongoing antihypertensive treatment after initial management
- Monitor response to treatment to:
  - ensure BP falls
  - identify adverse effects for woman and fetus
  - modify treatment according to response
- If BP controlled within target ranges, do not routinely limit duration of second stage of labour
- If BP does not respond to initial treatment, consider operative or assisted birth

Fluid balance and volume expansion

In women with severe pre-clampsia:
- limit maintenance fluids to 80 ml/hour unless there are other ongoing fluid losses (for example, haemorrhage)
- do not preload with intravenous fluids before establishing low-dose epidural analgesia and combined spinal epidural analgesia
- do not use volume expansion unless hydralazine is antenatal antihypertensive; consider using 500 ml or less crystalloid fluid before or at same time as first dose of hydralazine in antenatal period.

Magnesium sulfate
- Give intravenous magnesium sulfate if a woman with severe hypertension or severe preeclampsia is having or has recently had an eclamptic fit.
- Consider giving intravenous magnesium sulfate if birth planned within 24 hours in woman with severe pre-eclampsia.
- Do not use diazepam, phenytoin or other anticonvulsants as alternatives to magnesium sulfate in women with eclampsia.

Regimen for magnesium sulfate
- Loading dose of 4 g given intravenously over 5 to 15 minutes, followed by infusion of 1 g/hour for 24 hours
- Further dose of 2 to 4 g given over 5 to 15 minutes if recurrent seizures

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POST PARTUM HYPERTENSION AND READMISSION

- Preeclampsia/hypertension are often associated with readmission
  - Readmission associated with SBP ≥140/90 mm Hg within 24 hours before discharge increased the odds of readmission (adjusted odds ratio, 1.98; 95% confidence interval, 1.37–2.87).
  - 2 or more elevated blood pressure values further increased the odds (adjusted odds ratio, 3.14; 95% confidence interval, 2.33–4.24
  - Majority of women are admitted 5-7 days postpartum

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Bruce et. Al Am J Obstet Gynecol MFM. 2021 May 12;3(5):100397.

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POST PARTUM HTN ORDERS AT ALLINA

- Updated Guideline for Care
  - **Care of Patients with Hypertensive Disorders in Pregnancy and Postpartum**
- Medication management of HTN may be more aggressive in the postpartum period and the interval between pregnancies as placental perfusion is no longer a consideration
- PP goal to maintain BP < 130/80 mmHg before discharge
  - Based on AHA and NICE recommendations
- Use oral (longer-acting) antihypertensive agents to treat HTN
- Recommend initiating an oral antihypertensive medication for persistent BP > 140/90
  - Lifestyle modification, education, appropriate follow-up care

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BP MANAGEMENT POST PARTUM

Postpartum Blood Pressure Management			
	Location for management	Strategy	Goal
BP > 140/90 mm Hg	Mother Baby unit	Start antihypertensive of choice, titrate as needed	Decrease BP to target in 2-4 hours
BP > 160/110 mm Hg	Mother Baby unit	2 antihypertensive agents, different classes, titrate up as needed	Bring BP below 160/100 in 2-4 hours, then to target BP within 24 hours
BP > 180/120 mm Hg with or without organ dysfunction or complications	Start in Mother Baby unit Reassess in 1 hour	IV short-acting antihypertensive meds OR 3 antihypertensive agents of different classes	Goal: Decrease BP by 25% in 1 hour Bring BP below 160/100 in the next 2-4 hours Then to target BP within the next 24 hours
BP > 180/120 mm Hg with organ dysfunction or complications	ICU	IV short-acting antihypertensive meds AND Management of organ dysfunction or complications	Goal: Decrease BP by 25% in 1 hour Bring BP below 160/100 in the next 2-4 hours Then to target BP within the next 24 hours

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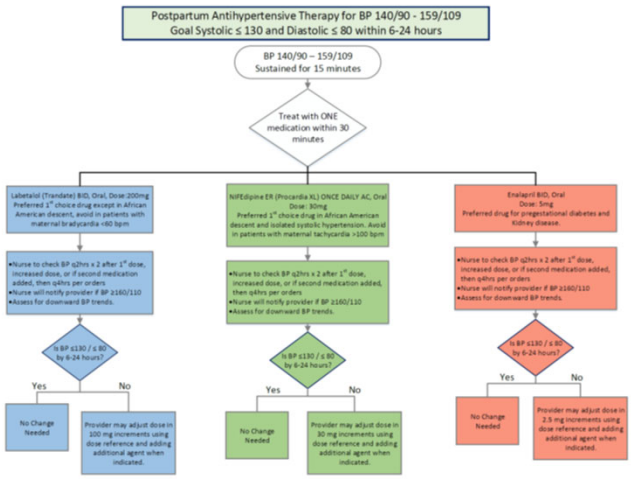
NEW POST PARTUM HTN ORDER SET



Antihypertensive Dosing Reference

Drug	Usual dose	Consider a second agent	Maximum dose for HTN	Onset of Action Peak effect
Nifedipine XL	30 mg daily	60 mg daily	Up to 120 mg/day	20-30 minutes Peak 4-7 hours
Labetalol	200 mg BID	300 mg BID	Not to exceed 2400 mg/day	15-20 minutes Peak 2-4 hours
Enalapril	5-10 mg BID	10 mg BID	40 mg/day	60 min Peak 2-4 hours
Hydralazine	10 mg q 6 hours	25 mg q 6 hours	300 mg/day	30-60 minutes Peak 1-2 hours
Atenolol	50 mg daily	100 mg daily	100 mg/day	60 minutes Peak 3 hours

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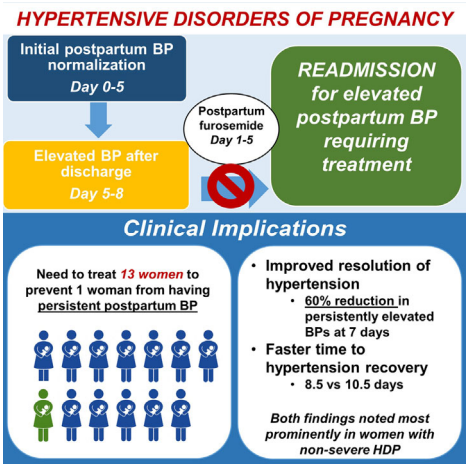
OTHER RECOMMENDATIONS

- **Diuretics**
- **Standard education**
  - Early warning signs
  - When to seek emergency care
  - Risk for cardiovascular disease
- **BP monitoring and f/u visits after discharge**
- **Recommendations for consultation and further care and follow-up**
  - MFM, Cardiology and APRN PP HTN Clinic after 12 weeks postpartum



Joana Lopes Perdigao. Hypertension. Volume: 77, Issue: 5, Pages: 1517-1524,

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Likelihood of recurrence of hypertensive disorders of Pregnancy (NICE UK)

	Type of hypertension in previous or current pregnancy		
Prevalence of hypertensive disorder in a future pregnancy	Any hypertension in pregnancy	Pre-eclampsia	Gestational hypertension
Any hypertension	Approximately 21% (1 in 5 women)	Approximately 20% (1 in 5 women)	Approximately 22% (1 in 5 women)
Pre-eclampsia	Approximately 14% (1 in 7 women)	Up to approximately 16% (1 in 6 women) If birth was at 28–34 weeks : approximately 33% (1 in 3 women) If birth was at 34–37 weeks: approximately 23% (1 in 4 women)	Approximately 7% (1 in 14 women)
Gestational hypertension	Approximately 9% (1 in 11 women	Between approximately 6 and 12% (up to 1 in 8 women)	Between approximately 11 and 15% (up to 1 in 7 women)
Chronic hypertension	Not applicable	Approximately 2% (up to 1 in 50 women)	Approximately 3% (up to 1 in 34 women)
No evidence was identified for women who gave birth at less than 28 weeks, but the committee agreed that the risk was likely to be at least as high, if not higher, than that for women who gave birth between 28 and 34 weeks.			

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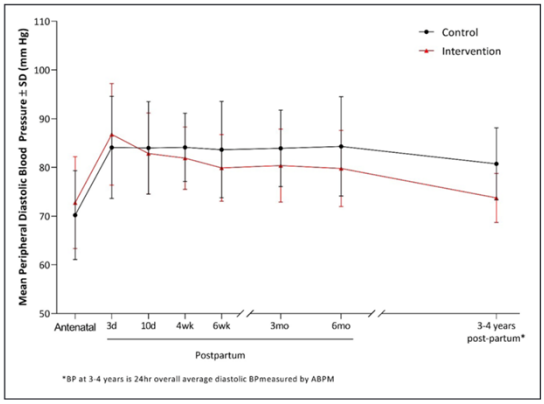
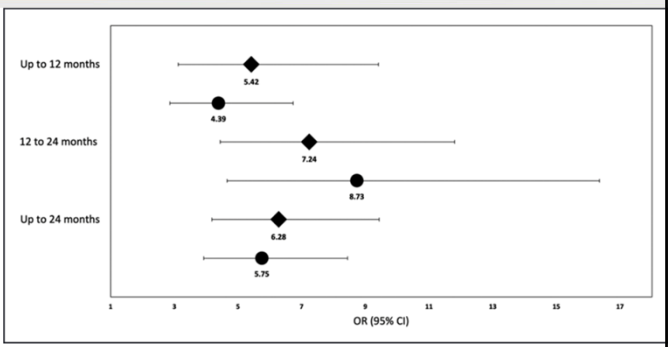
BP TRENDS POST HYPERTENSIVE PREGNANCY RISK OF DEVELOPING CHTN





Risk of postnatal hypertension within 2 years of delivery after hypertensive disorders of pregnancy including (♦) or excluding (●) women with preexisting chronic hypertension. OR indicates odds ratio. Adapted from Giorgione et al.6

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