I Congresso Brasileiro sobre Hipertensão na Gravidez 2021

DECLARAÇÃO DE CONFLITO DE INTERESSES

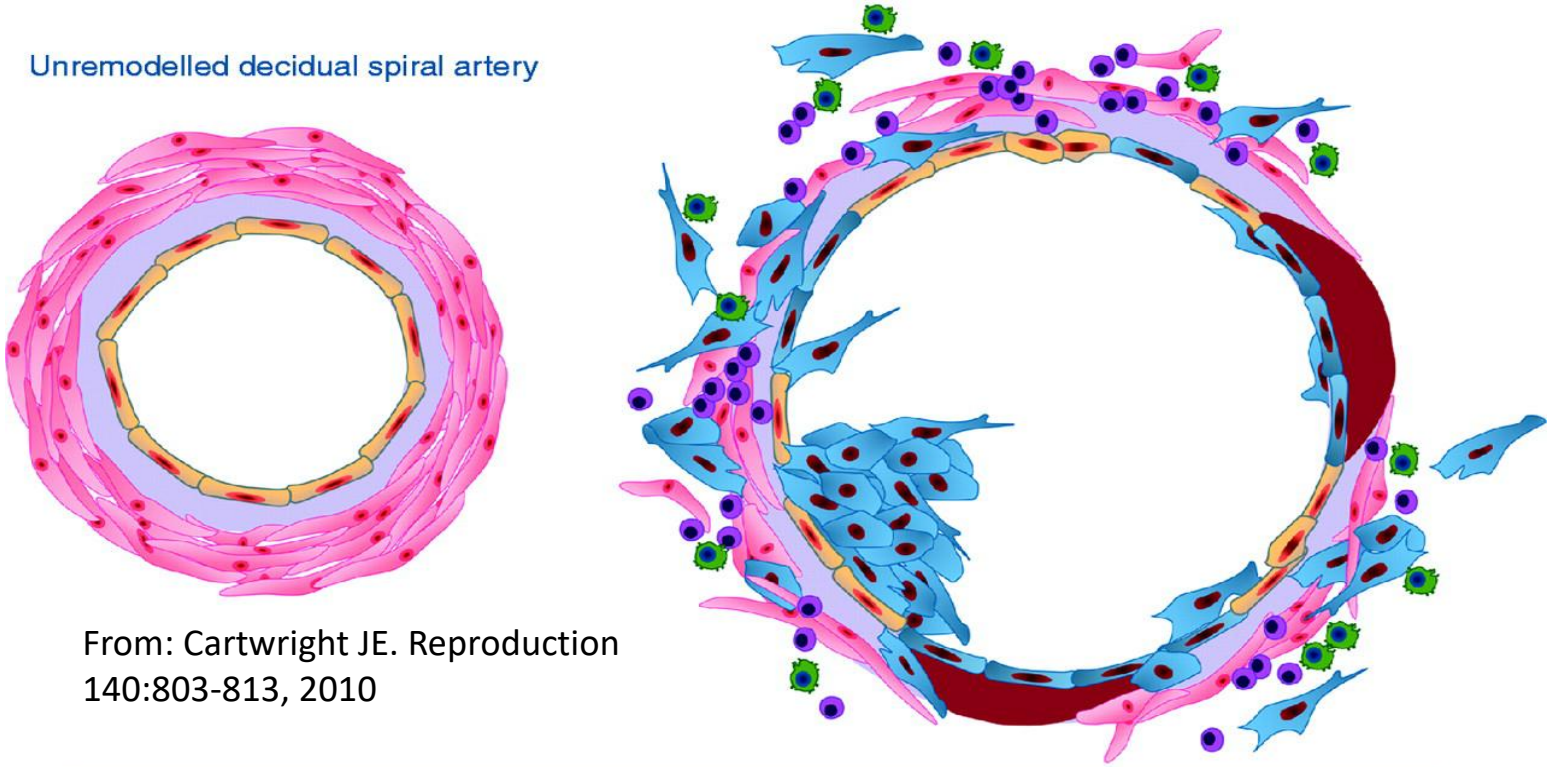
Atualmente não recebo qualquer forma de pagamento ou auxílio financeiro de entidade pública ou privada para pesquisa ou desenvolvimento de métodos diagnósticos e terapêuticos ou ainda, honorários como consultor de indústria farmacêutica.

Como confirmar o diagnóstico de Pré-eclâmpsia?

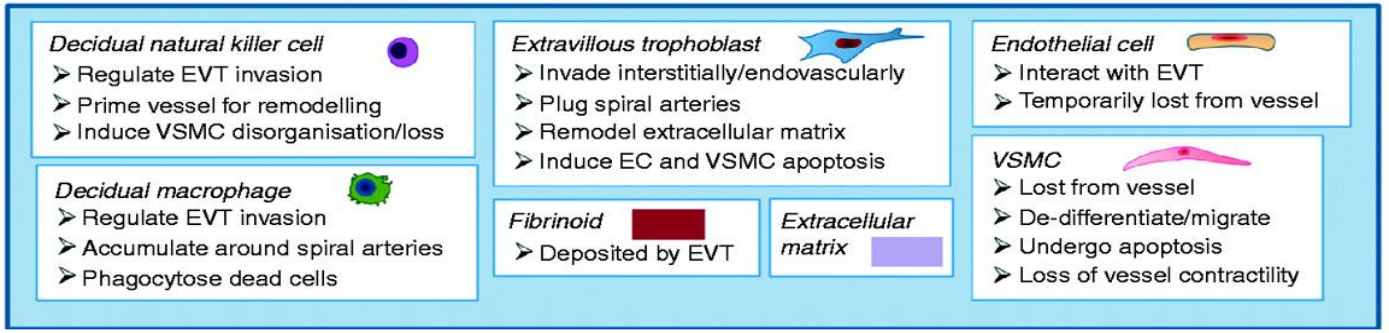
Dr Henri Augusto Korkes

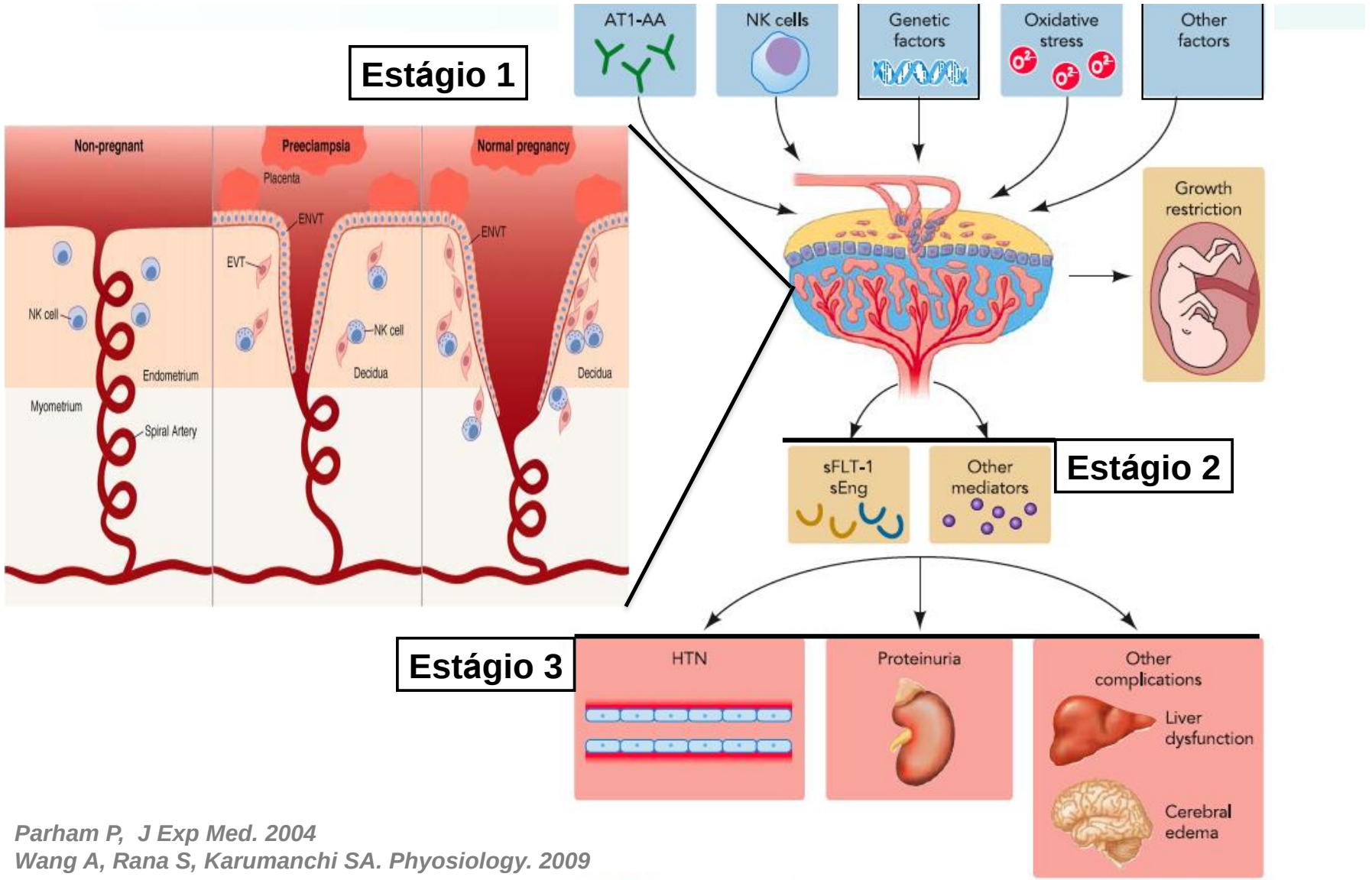
Remodelling decidual spiral artery

Unremodelled decidual spiral artery



From: Cartwright JE. Reproduction 140:803-813, 2010

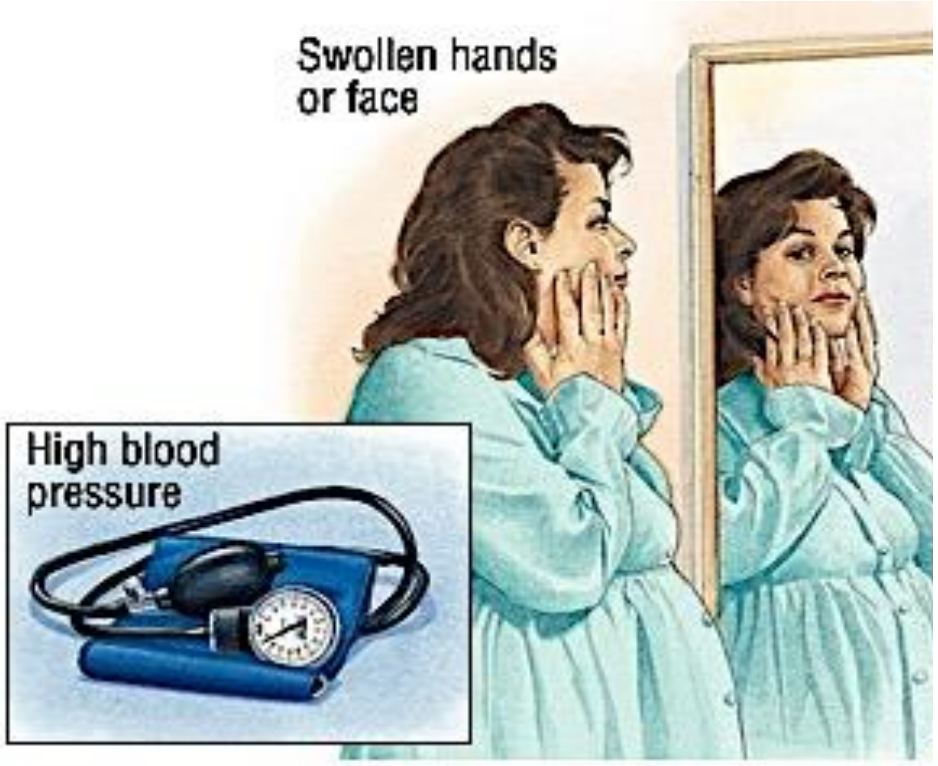




Parham P, J Exp Med. 2004
Wang A, Rana S, Karumanchi SA. Phyosiology. 2009

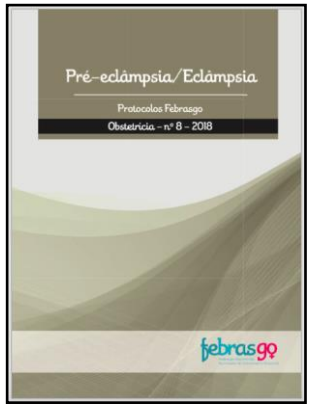
Assistência pré-natal

SUSPEITA CLÍNICA DE PRÉ-ECLÂMPSIA?



- Edema?
- Elevação níveis pressóricos?
- Ganho de peso (>1 Kg / semana)?
- Altura Uterina inadequada?

EXAMES DIAGNÓSTICOS ESPECÍFICOS



Pré-eclâmpsia: Critérios para o Diagnóstico

Hipertensão Arterial + Proteinúria	PAS ≥ 140 mmHg ou PAD ≥ 90mmHg aferidas em duas ocasiões com 4 horas de intervalo, após 20 semanas em gestantes com PA normal.
	Relação Proteinúria/Creatinúria ≥0.3 mg/dL ou ≥ 300mg em 24 h ou fita reagente ≥ 1+
Na ausência de proteinúria	**Surgimento de Hipertensão associado a pelo menos um dos seguintes:**
Trombocitopenia	Contagem Plaquetária ≤ 100.000mm^3
Alterações Renais	Creatinina Sérica > 1.1 mg/dl ou o dobro do valor basal
Comprometimento Hepático	Aumento das transaminases (TGO >70U/L) ou Dor persistente em quadrante superior direito
Edema Pulmonar	Palidez, sudorese fria, cianose de extremidades, ansiedade, confusão mental, respiração superficial e ruidosa, secreção pulmonar rosada. Sibilos, estertores crepitantes/subcrepitantes
Sinais ou sintomas lesão em órgãos-alvos	Cefaléia ou Escotomas ou Epigastralgia (iminência de Eclâmpsia)
Comprometimento Fetal	Insuficiência Placentária / RCF / Alterações Art. Umbilical

CNE/Febrasgo.Comissão Nacional Especializada: Hipertensão - Febrasgo.2019
RBEHG. Rede Brasileira de Estudos sobre Hipertensão na Gravidez 2020

Pré-eclâmpsia: Critérios para o Diagnóstico

Hipertensão Arterial +	PAS ≥ 140 mmHg ou PAD ≥ 90mmHg aferidas em duas ocasiões com 4 horas de intervalo, após 20 semanas em gestantes com PA normal.
Proteinúria	Relação Proteinúria/Creatinúria ≥0.3 mg/dL ou ≥ 300mg em 24 h ou fita reagente ≥ 1+ [1,4] / 2+ [2,3]
Na ausência de proteinúria	**Surgimento de Hipertensão associado a pelo menos um dos seguintes:**
Trombocitopenia	Contagem Plaquetária ≤ 100.000mm^3 [1,2] (<150.000mm^3) [3,4]
Alterações Renais	Creatinina Sérica > 1.1 mg/dL [1,2] (> 1 mg/dL) [3,4]
Comprometimento Hepático	Aumento das transaminases (TGO) >70U/L [1,2] (>40U/L) [3,4] e/ou dor persistente em quadrante superior direito
Edema Pulmonar	Palidez, sudorese fria, cianose de extremidades, ansiedade, confusão mental, respiração superficial e ruidosa, secreção pulmonar rosada. Sibilos, estertores crepitantes/subcrepitantes
Sinais ou sintomas lesão em órgãos-alvos	Cefaléia ou Escotomas ou Epigastralgia (iminência de Eclâmpsia) [1,2,3,4]
Comprometimento Fetal	Insuficiência Placentária / RCF / Alterações Art. Umbilical [1,3,4]

1 – RBEHG. Rede Brasileira de Estudos sobre Hipertensão na Gravidez 2020
2- ACOG.Practice Bulletin. Gestacional Pregnancy.2019
3- NICE. Hypertension in pregnancy: diagnosis and management. Published: 25 June.2019
4- ISSHP. Brown,M, et al. Pregnancy Hypertension,https://doi.org/10.1016/j.preghy.2018

Aferiçao correta da Pressao Arterial

management of acute-onset, severe hypertension in pregnant women and women in the postpartum period.

- Immediate release oral nifedipine also may be considered as a first-line therapy, particularly when IV access is not available.
- The use of IV labetalol, IV hydralazine, or immediate release oral nifedipine for the treatment of acute-onset, severe hypertension for pregnant or postpartum patients does not require cardiac monitoring.
- In the rare circumstance that IV bolus labetalol, hydralazine, or immediate release oral nifedipine fails to relieve acute-onset, severe hypertension and is given in successive appropriate doses, emergent consultation with an anesthesiologist, maternal-fetal medicine subspecialist, or critical care subspecialist to discuss second-line intervention is recommended.
- Magnesium sulfate is not recommended as an antihypertensive agent, but magnesium sulfate remains the drug of choice for seizure prophylaxis for women with acute-onset severe hypertension during pregnancy and the postpartum period. Starting magnesium should not be delayed in the setting of acute severe hypertension; it is recommended regardless of whether the patient has gestational hypertension with severe features, preeclampsia with severe features, or eclampsia.

Risk reduction and successful, safe clinical outcomes for women with preeclampsia or eclampsia require appropriate and prompt management of severe systolic and severe diastolic hypertension (1). Integrating standardized order sets into everyday safe practice in the United States is a challenge. Increasing evidence indicates that standardization of care improves patient outcomes (2). Introducing standardized, evidence-based clinical guidelines for the management of patients with preeclampsia and eclampsia has been demonstrated to reduce the incidence of adverse maternal outcomes (3, 4). With the advent of pregnancy hypertension guidelines in the United Kingdom, care of maternity patients with preeclampsia or eclampsia improved significantly, and maternal mortality rates decreased because of a reduction in cerebral and respiratory complications (5, 6). Individuals and institutions should have mechanisms in place to initiate the prompt administration of medication when a patient presents with a hypertensive emergency. Treatment with first-line agents should be expeditious and occur as soon as possible within 30–60 minutes of confirmed severe hypertension (blood pressure greater than 160/110 mm Hg and persistent for 15 minutes) to reduce the risk of maternal stroke (7–9). The use of checklists may be a useful tool to facilitate this process. This document revises Committee Opinion Number 623, *Emergent Therapy for Acute-Onset, Severe Hypertension with Preeclampsia or Eclampsia*, primarily to clarify the terminology around immediate release oral nifedipine and to clarify monitoring expectations during and after treatment of acute-onset, severe hypertension.

Acute-onset, severe systolic (greater than or equal to 160 mm Hg) hypertension; severe diastolic (greater than or equal to 110 mm Hg) hypertension; or both can occur during the prenatal, intrapartum, or postpartum periods. These conditions can occur in the second half of gestation in women not known to have chronic hypertension who develop sudden, severe hypertension (ie, with preeclampsia; gestational hypertension; or hemolysis, elevated liver enzymes, and low platelet count [HELLP] syndrome), but they also can occur among patients with chronic hypertension who are developing superimposed preeclampsia or a hypertensive exacerbation with acutely worsening, difficult to control, severe hypertension.

Acute-onset, severe hypertension that is accurately measured using standard techniques and is persistent for 15 minutes or more is considered a hypertensive emergency. It is well known that severe hypertension can cause central nervous system injury. As stated in the Confidential Enquiries report from the United Kingdom, two thirds of the maternal deaths during 2003–2005 resulted from cerebral hemorrhage or infarction (5). The degree of systolic hypertension (as opposed to the level of diastolic hypertension or relative increase or rate of increase of mean arterial pressure from baseline levels) may be the most important predictor of cerebral injury and infarction. In a case series of 28 women with preeclampsia with severe features and stroke, all but one woman had severe systolic hypertension just before a hemorrhagic stroke, and 54% died, whereas only 13% had severe diastolic hypertension in the hours preceding a stroke (10). A similar relationship between severe systolic hypertension and risk of hemorrhagic stroke has been observed in nonpregnant adults (11). Thus, systolic blood pressure (BP) of 160 mm Hg or greater should be included as part of the definition of severe hypertension in pregnant women or women in the postpartum period (12).

Accurate measurement of blood pressure is necessary to optimally manage hypertension in pregnancy. Standardized protocols to measure BP in pregnant patients facilitate accuracy and ensure that appropriate steps are followed across all units regardless of patient arm size or shape. Mercury sphygmomanometer is considered the gold standard; however, validated equivalent automated equipment also can be used. It is necessary to obtain the correct cuff size (a range of cuff sizes with directions to determine appropriate cuff size based on arm shape should be available) and patients should be

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WOMEN'S HEALTH CARE PHYSICIANS

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Circunferência do braço (cm)	Correção da PAS (mmHg)	Correção da PAD (mmHg)
20	+11	+7
22	+9	+6
24	+7	+4
26	+5	+3
28	+3	+2
30	0	0
32	-2	-1
34	-4	-3
36	-6	-4
38	-8	-6
40	-10	-7
42	-12	-9
44	-14	-10
46	-16	-11
48	-18	-13
50	-21	-14

Maxwell/lancet 1982

ACOG. Emergent therapy for severe hypertension. Vol 133-2.Jan. 2019

positioned in a sitting or semireclining position with the back supported. Patients should not be repositioned to reclining or be on their sides in order to obtain a lower BP because it will provide a false reading (see the California Maternal Quality Care Collaborative Toolkit for standardized protocol for a BP measurement example) (13).

Pregnant women, or women in the postpartum period, with acute-onset, severe systolic hypertension, severe diastolic hypertension, or both require urgent antihypertensive therapy. The goal is not to normalize BP, but to achieve a range of 140–150/90–100 mm Hg in order to prevent repeated, prolonged exposure to severe systolic hypertension, with subsequent loss of cerebral vasculature autoregulation. In the event of a hypertensive crisis, with prolonged uncontrolled hypertension, maternal stabilization should occur before delivery, even in urgent circumstances (14). When acute-onset, severe hypertension is diagnosed in the office setting, the patient should be expeditiously sent to the hospital for treatment. Also, if transfer to a tertiary center is likely (eg, for preterm preeclampsia with severe features), BP should be stabilized and other measures initiated as appropriate, such as magnesium sulfate for seizure prophylaxis, before transfer.

Endotracheal intubation is another risk of severe hypertension and is well known to increase BP sometimes to severe levels that require emergent therapeutic intervention (14). Induction of general anesthesia and intubation should never be undertaken without first taking steps to eliminate or minimize the hypertensive response to intubation. Close maternal and fetal monitoring by a physician and nursing staff are advised during the treatment of acute-onset, severe hypertension, and judicious fluid administration is recommended even in the case of oliguria. After initial stabilization, the team should monitor BP closely and institute maintenance therapy as needed.

First-line Therapy

Intravenous labetalol and hydralazine have long been considered first-line medications for the management of acute-onset, severe hypertension in pregnant women and women in the postpartum period. Although relatively less information currently exists for the use of calcium channel blockers for this clinical indication, the available evidence suggests that immediate release oral nifedipine also may be considered as a first-line therapy (15–18), particularly when IV access is not available. Some studies have shown that women who received immediate release oral nifedipine had their BP lowered more quickly than with either IV labetalol or hydralazine and had a significant increase in urine output (15, 19). Concern for neuromuscular blockade and severe hypotension with the contemporaneous use of nifedipine and magnesium sulfate were not substantiated in a large retrospective review (20). However, because both drugs are calcium antagonists, facilities should be prepared to monitor maternal vital signs (see Box 1), with attention to normal heart rate and blood pressure. Immediate release oral nifedipine capsules should be administered orally and not punctured or otherwise administered sublingually.

Patients may respond to one drug and not another. Magnesium sulfate is not recommended as an antihypertensive agent, but magnesium sulfate remains the drug of choice for seizure prophylaxis for women with acute-onset severe hypertension during pregnancy and the postpartum period. Starting magnesium should not be delayed in the setting of acute severe hypertension; it is recommended regardless of whether the patient has gestational hypertension with severe features, preeclampsia with severe features, or eclampsia. Box 1, Box 2, and Box 3 outline sample order sets for the use of IV labetalol, IV hydralazine, and immediate release oral nifedipine for the initial management of acute-onset, severe hypertension in women who are pregnant or in the postpartum period (15–17, 19, 21).

It is important to note differences in recommended dosage intervals between these options, which reflect differences in their pharmacokinetics. Although all three medications are appropriately used for the treatment of hypertensive emergencies in pregnancy, each agent can be associated with adverse effects. Parenteral hydralazine may increase the risk of maternal hypotension (systolic BP, 90 mm Hg or less) (22). Parenteral labetalol may cause neonatal bradycardia and should be avoided in women with asthma, heart disease, or congestive heart failure (23, 24). Nifedipine has been associated with an increase in maternal heart rate, and less risk of overshoot hypotension (15). No significant changes in umbilical blood flow have been observed with the use of either labetalol or hydralazine (25), and maternal and perinatal outcomes are similar for both drugs (18). Likewise, no significant changes in the uteroplacental blood flow or the fetal heart have been noted with the use of immediate release oral nifedipine for treatment of severe pregnancy-induced hypertension (26–28). Immediate release oral nifedipine should not be given sublingually because of risk of hypotension.

The use of IV labetalol, IV hydralazine, or immediate release oral nifedipine for the treatment of acute-onset, severe hypertension for pregnant or postpartum patients does not require cardiac monitoring or other special monitoring beyond that which is outlined in the order sets in this document (see Box 1, Box 2, Box 3), which describe time intervals for repeat vital sign assessment and escalation of therapy. In addition, personnel in all hospital settings, including labor and delivery, antepartum, postpartum, and emergency department units, should be able to provide these initial medications without transferring patients to another unit. Protocols that include additional requirements in order to provide urgent IV hypertension therapy lead to unnecessary delays

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positioned in a sitting or semireclining position with the back supported. Patients should not be repositioned to reclining or be on their sides in order to obtain a lower BP because it will provide a false reading (see the California Maternal Quality Care Collaborative Toolkit for standardized protocol for a BP measurement example) (13).

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Recomendar, se Fatores de Risco

AAS: 75 - 150mg / dia (<16 semanas a 36 semanas)

Duley L, et al. Cochrane Database of Systematic Reviews 2007
Royal College of Obstetricians and Gynaecologists / London - NICE guidelines. August 2010
Hypertension in Pregnancy - American College of Obstetricians and Gynecologists, 2013
ISSHP recommendations. Brown, M., Pregnancy Hypertension (2018).
ACOG. Practice Bulletin Number 202: 2019

Calcio 1000mg a 2500 mg / dia

Hofmeyr GJ, et al. Cochrane Database of Systematic Reviews 2010.
Royal College of Obstetricians and Gynaecologists / London - NICE guidelines. August 2010
Hypertension in Pregnancy - American College of Obstetricians and Gynecologists, 2013
Cochrane, 2017
ISSHP recommendations. Brown, M., Pregnancy Hypertension (2018).
Cochrane 2018
ACOG. Practice Bulletin Number 202: 2019

Risco considerado	Apresentação clínica e/ou obstétrica
Alto	História de pré-eclâmpsia, principalmente acompanhada de desfechos adversos
	Gestação múltipla
	Obesidade (IMC > 30)
	Hipertensão arterial crônica
	Diabetes tipo 1 ou 2
	Doença renal
	Doenças autoimunes (Ex: Lúpus erimatoso sistêmico, síndrome antifosfolípide)
Moderado	Nuliparidade
	História familiar de pré-eclâmpsia (Mãe e/ou irmãs)
	Baixo nível socioeconômico
	Etnia afrodescendente
	Idade ≥ 35 anos
	História pessoal de baixo peso ao nascer
	Gravidez prévia com desfecho adverso
	Intervalo > 10 anos desde a última gestação
Baixo	Gravidez prévia de termo e sem intercorrências

Peraçoli JC, Ramos JGL, Sass N, Martins-Costa SH, de Oliveira LG, Costa ML, Cunha Filho EV, Korkes HA, de Sousa FLP, Mesquita MRS, Borges VTM, Corrêa Jr MD, Araujo ACPF, Zaconeta AM, Freire CHE, Poli-de-Figueiredo CE, Rocha Filho EAP, Cavalli RC. Pré-eclâmpsia/eclâmpsia - Protocolo no. 01 Rede Brasileira de Estudos sobre Hipertensão e Gravidez (RBEHG), 2020.

Suspeita Clínica HIPERTENSÃO GESTACIONAL / PRÉ-ECLÂMPSIA

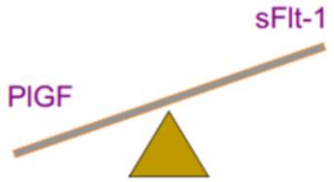
Suspeita Clínica HIPERTENSÃO GESTACIONAL / PRÉ-ECLÂMPSIA

PA > 140 OU 90 mmHg

Sintomas -

Pré-Eclâmpsia???

Exames Negativos



↑sFlt-1/PlGF ratio

sFlt-1/PlGF ≤38[1]	Predição a curto prazo Exclusão em uma semana	Paciente não irá desenvolver PE em uma semana (99,3% VPN)
sFlt-1/PlGF ≤38[2]	Predição a curto prazo Exclusão em 4 semanas	Paciente não irá desenvolver PE em 4 semanas (94,3% VPN)

1. Zeisler H, Llurba E, Chantraine F, et al. Predictive Value of the sFlt-1:PlGF Ratio in Women with Suspected Preeclampsia. N Engl J Med 2016;374:13-22.
2. Zeisler H, et al.The sFLt-1/PlGF ratio: rulling out pre-eclampsia for up to 4 weeks and the value of retesting. *Ultrasound in Obstetrics & Gynecology*. 2018. doi: 10.1002/uog.19178.

1- Alta com orientações (Medir Pressão diariamente e pronto socorro se sintomas)
2- Ajuste de dose de Medicação se necessário
3- Retorno precoce ao Pré-natal 1 semana
4- Rotina de exames e testes de proteinúria
5- Vitalidade Fetal conforme IG

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Ministério da Saúde
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Fundação Oswaldo Cruz
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USCS
Faculdade de Medicina
Universidade Federal do Rio Grande do Sul
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Roche
UMC
UNIVERSIDADE
sogorn
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