Hypertensive disorders of pregnancy
Summary of definitions, prevention and management of four international guidelines

	WHO guideline (2011)	ACOG-guideline (2013)	Queensland Brisbane (2016)	NVOG-guideline (2011)
Definition				
- Pre-eclampsia	Onset of new episode of hypertension during pregnancy (persistent diastolic BP ≥ 90 mm Hg) with substandial proteinuria (>0.3 g/day)	BP systolic ≥ 140 and/or diastolic ≥ 90 mm Hg (measured twice at least 4 hours apart) after GA20 **OR** BP systolic ≥ 160 and/or diastolic ≥ 110 mm with either proteinuria **OR** with severity symptoms	Hypertension (BPs≥ 140 OR BPd ≥ 90) after 20 weeks of gestation on 2 or more occassions accompanied by one of the following: proteinuria (>30mg/mmol), creat >90, oliguria, thrombopenia (<100), hemolysis, raised transaminases, DIC, neurological symptoms, pulmonary oedema or fetal growth restriction.	Pregnancy induced hypertension (BP systolic ≥ 140 **and/or** diastolic ≥ 90 mm Hg after GA 20, meassured twice in women with normal previous BP. BP should be normal within 3 months post partum) with proteïnuria (>0.3g/day)
- Severe PE	Severe hypertension (not defined), heavy proteinuria or substantial maternal organ dysfunction. Early onset (before 32-34 weeks) and fetal morbidity are used as independent severity criteria in some countries	Systolic ≥ 160 or diastolic ≥ 110 mm Hg (measured twice at least 4 hours apart while patient is on bed) **AND** thrombopenia <100 **OR** impaired liverfunction or epigastric pain **OR** impaired renal function (creatinine 2x normal) **OR** pulmonary oedema **OR** cerebral/ visual disturbances.	[Magpie Trial] BPs ≥ 170 or BPd≥ 110 mm Hg **AND** 3+ proteinuria **OR** BPs ≥ 150 or BPd≥ 100 mm Hg **AND** 2+ proteinuria **AND** 2 severity symptoms **OR** pre-eclampsia with at least one sign of central nervous system irritability	Systolic ≥ 160 or diastolic ≥ 110 mm Hg **OR** clinical symptoms of pre-eclampsia (headache, upper-abdominal pain, nausea) **OR** proteïnuria >5 g / 24 hours. [Proteinuria can remain absent]
- Eclampsia	Generalized seizures in addition to pre-eclampsia criteria	New-onset grand mal seizures in a woman with pre-eclampia	One or more seizures superimposed on PE (HT/proteinuria may be absent)	Not specified
Prevention				
- Calcium	When low calcium intake (<900mg/ day)	In populations with low calcium intake	In high risk women with low calcium intake	Not specified
- Aspirin	75mg/ day in high risk women, initiate GA<20 weeks	In high risk women, start 60-80 mg daily in late first trimester	Moderate to high risk of PE; 100mg/day , initiate <16 weeks. Until 37 weeks or birth of baby (NNT 42)	Not specified

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Medical treatment				
Antihypertensive				
-- Initiation	Not specified	Persistent BP systolic ≥ 160 mm Hg **OR** diastolic ≥ 110 mm Hg	BP systolic ≥ 160 **OR** diastolic ≥ 100 mm Hg	Systolic ≥ 160 **OR** diastolic ≥ 110 mm Hg
-- Drug choice	Hydralazine, methyldopa, labetalol, nifedipine, ketanserin, and others are compared. No preference or clear recommendation.	Labetalol, nifedipine, methyldopa	Oral: methyldopa, labetalol, oxyprenolol, hydralazine, nifedipine, prazosin, clonidine. I.V. nifedipine, hydralazine, labetalol, diazoxide	Methyldopa, labetalol, nifedipine
Magnesium sulfate				
-- Indication	Eclampsia; severe PE	Eclampsia; severe PE	Eclampsia; HELLP; severe PE; neuroprotection	Eclampsia; severe PE, consider in mild pre-eclampsia
-- Loading dose	Not specified	4-6 (time ?)	4 g IV in 20 min	4-6 g in 10-30 min
-- Maintanance	Not specified	1-2 g per hour	1 g per hour	1 g in 60 min
-- 2nd seizure	Not specified	No specific recommendations	2 g in 5 min (may repeat after 2 min) Other possibilities: diazepam 5-10mg IV (2-5mg/min), midazolam 5-10 mg IV in 2-5min	2 g in 5 min (max. twice) Other possibilities: lorazepam 4mg i.v. slowly, sedate and intubate
-- Stop treatment	Not specified	At least 24 hours after last convulsion	At least 24 hours after birth or last seizure	At least 24 hours after initiation
Other				
Corticosteroids	Not specified	GA <34 weeks	GA <34 weeks	GA <34, birth expected in 2-10 days; Betamethason 12mg i.m. 2x (24hr apart)
Vital signs	Not specified	Every 8 hours	At least every 4 hours	Not specified
Fluids	Not specified	Not specified	No large volumes of fluids. Restrict to 1.5L/24 hrs after birth. Strict fluid balance	Not specified
Delivery timing in severe PE	Unviable: induction. Term: delivery asap Before term: expectant unless uncontrolled hypertension or fetal distress	Depends on severity; GA and NICU-facility. Deliver shoud be shortly after stabilisation.	Stabilize (control hypertension, correct coagulopathy, initiate $MgSO_4$, control fluids) and deliver	Not specified
Post partum medication	Not specified. Severe post partum hypertension; in all women treated antenatally	Not specified. Initiate when BP systolic ≥ 150 OR diastolic ≥ 100 mm Hg.	Avoid abrupt withdrawal of antihypertensives. Cease methyldopa (depression). Consider nifedipine.	Not specified
Other recommendations	Not specified	No NSAIDS, promote breastfeeding. Consider postnatal counseling.	Consider VTE profylaxis (during admission); postnatal counseling. Follow-up 6 weeks	Not specified

Legend: BP = blood pressure, GA = gestational age, HT = hypertension, IV = intravenous, MgSO4 = magnesium sulfate, NNT = number needed to treat, VTE = venous thrombo-embolism, NSAID = non-steroidal anti-inflammatory drugs.

Postpartum hemorrhage
Summary of definitions, risk factors, prevention and resuscitation of four international guidelines

	WHO-guideline (2011)	ACOG-guideline (2013)	RCOG-guideline (2014)	NVOG-guideline (2011)
Definition	PPH: >500mL Severe PPH >1 L	Vaginal > 500mL Caesarean >1 L	Minor: >500mL Moderate: 1-2 L Major: >2 L	Vaginal > 500mL Caesarean >1 L
Incidence	2%	4-6%	3.7/1000 (> 5 PC)	3.8% (2003) 6.2% (2009)
Risk factors	Minimally described	Elaborately described	Elaborately described with odds ratio	Elaborately described
Prevention	AMTSL (CCT after 30 min)	Not discussed	AMTSL Placenta location	AMTSL
- Oxytocin	10 IU i.m. / i.v. in all births	Not specified	Oxytocin 5 or 10 IU i.m. 5 IE i.v. (Caesarean) Ergometrin 0.5 mg i.m. Combined if Hb low	Oxytocin 5 or 10 IU i.m. 5 IE i.v. (Caesarean) followed by 10 IU i.v. in 4 hours
Resuscitation				
- Access	Not specified	Ample intravenous access	Intravenous access 2x	Intravenous access 2x
- Fluids	Crystalloids	Crystalloids	Crystalloids, warm/ rapid Max. 2 L (+ 1.5L colloids)	Crystalloids, warm/ rapid (1 : 1 blood loss)
- Oxygen	Not specified	10-15 L per minute	10-15 L / min over NRM	Not specified
- Blood products	Not specified	Blood as needed and blood bank notification	As soon as possible 6 PC : 4 FFP	4 PC : 4 FFP
- Uterine massage	Recommended, contin-uously. Bimanual, aorta compression advised	Not specified	Not specified	Recommended, continuously
- Coagulation screening	Blood loss up to 1500mL or >2 uterotonics	Not specified	>1L blood loss	>1L blood loss or >2L cristalloids
Medical treatment				
- Oxytocin infusion	Recommended	10-40 IU i.v. or 10 IU i.m.	5 IU i.v. may repeat or 40 IU in 500mL à 4 hrs	10 IU i.v. followed by 10 IU i.v. à 4 hrs
- Misoprostol	If oxytocin not available: 600ug oral or 800ug sublingual	800-1000ug rectal	1000 ug rectal	Not recommended
- Ergots	If oxytocin not available Not in retained placenta	Methyl-ergonovine 0.2 mg i.m. every 2-4 hr	Ergometrine 0.5mg i.m. or i.v.	Metergin 0.2mg i.m or i.v.
- Others	Not specified	Carboprost 0.25mg i.m. Dinoprostone 20mg PV Factor VIIa 50-100ug/kg every 2 hours	Carboprost 0.25mg i.m. (max 8 doses)	Sulproston 500 ug / 30 mins (followd by 60-120 ug per hour). Fibrinogen 2g (in >2L blood loss)
- Tranexamic Acid	Recommended in case of persistent bleeding	Not specified	Not recommended	Recommended, 1-2 g
- Antibiotic profylaxis in MPR	Ampicillin or cefazolin	Not specified	Not specified	Cefazolin/metronidazol or amoxicillin/clav. acid
Surgical treatment				
- Uterine packing	Not recommended	4-inch gauze 5000U thrombin in 5mL saline	Not recommended	Not recommended
- Balloon tamponade	Refractory bleeding/ Uterotonics unavailable	Foley (60-80mL) Bakri (300-500mL)	Leave for 4-6 hrs	In refractory bleeding Bakri (300-500mL)
- Brace suture	Not specified	B-Lynch, square	B-Lynch, square	B-Lynch, square
- Vessel ligation	Uterine and iliac artery	Uterine and iliac artery	Uterine and iliac artery	Not specified
- Embolization	If bleeding stable	Not specified	Yes, consider	Yes, consider
- Hysterectomy	In refractory bleeding despite vessel ligation	Not specified	Rather sooner than later	In case of placenta accreta, uterine rupture or Jehova's witnesses

Legend: AMTSL = active management of the third stage of labor. CCT = controlled cord traction. FFP = fresh frozen plasma. Hb = hemoglobin. MPR = manual placenta removal. NRM = non-rebreathing mask. PC = packed cells.