Definitions for hypertensive disorders in pregnancy in Aotearoa and BP measurement

Healthcare Provider Information

Purpose

This document summarises the recommended definitions and classifications for preeclampsia and other hypertensive disorders of pregnancy in Aotearoa and the recommended methodology to standardise blood pressure measurement in pregnancy. This document has been developed to support hospitals and healthcare professionals to implement the recommendations made in Taonga Tuku Iho on preeclampsia, as a major contributor to provider-initiated preterm birth. The recommendations, background, management algorithms and additional information can be reviewed on the Carosika Collaborative Taonga Tuku Iho website www.bestpractice.carosikacollaborative.co.nz.

Definitions and classifications

Hypertension

- Systolic blood pressure (sBP) ≥140 mmHg or diastolic blood pressure (dBP) ≥90 mmHg measured on two or more consecutive occasions at least four hours apart.

Chronic/pre-existing hypertension

- Hypertension confirmed prior to conception or before 20 weeks gestation with or without a known cause.

Gestational hypertension

- New onset hypertension after 20 weeks gestation (with normal blood pressure before 20 weeks) with none of the abnormalities that define preeclampsia and where blood pressure returns to normal three months after giving birth*.

Preeclampsia

- New onset of hypertension after 20 weeks gestation (with normal blood pressure before 20 weeks) or superimposed on pre-existing hypertension and when one or more of the following also develop as new conditions:

  Proteinuria spot protein:creatinine ratio ≥30mg/mmol *Note: Proteinuria is not essential for diagnosis of preeclampsia*

  Other maternal organ dysfunction
  - Renal: creatinine >90 μmol/L, urine output <80 mL over four hours.
  - Liver: elevated aspartate transaminase (AST) and/or alanine transaminase (ALT) at least twice upper limit of normal* (normal range ALT 0–30 u/L and AST 10–50 u/L) with or without right upper quadrant or epigastric abdominal pain.
  - Neurological: hyperreflexia accompanied by clonus, severe headaches, persistent visual scotomata, eclampsia, altered mental status, blindness, stroke.
  - Haematological: thrombocytopaenia (platelet count <100 × 10^9/L*), haemolysis (microangiopathic haemolytic anaemia with red cell fragments on blood film)

  Uteroplacental dysfunction (fetal growth restriction, placental abruption).

These definitions were developed for the Te Whatu Ora clinical practice guideline "Diagnosis and Treatment of Hypertension and Pre-eclampsia in Pregnancy in Aotearoa New Zealand: Te Tautohu, Te Tumahu i te Toto Pōrutu me te Pēhanga Toto Kaha i te Hapūtanga ki Aotearoa: A clinical practice guideline' https://www.tewhatuora.govt.nz/publications/diagnosis-and-treatment-of-hypertension-and-pre-eclampsia-in-pregnancy-in-aotearoa-new-zealand. They are largely the same as international definitions and classifications including those used in the International Society for the Study of Hypertension in Pregnancy (ISSHP) statement https://isshp.org/guidelines/
* identifies where Aotearoa definitions differ to those in the ISSHP statement (details of these differences are noted in Taonga Tuku Iho).

Eclampsia

- New onset of seizures in association with preeclampsia occurring before, during or after birth. Eclampsia is self-limiting, without persistent clinical neurological features and not caused by pre-existing neurological conditions.

HELLP syndrome (Haemolysis Elevated Liver enzymes Low Platelets)

- A variant of severe preeclampsia and includes features of haemolysis, elevated liver enzymes and low platelets.

Severe preeclampsia Preeclampsia with:

- Severe hypertension sBP ≥160 mmHg and/or dBP ≥110 mmHg
- Impaired liver function not responding to treatment and not accounted for by an alternative diagnosis
- Progressive renal insufficiency (creatinine >90 µmol/L, doubling of serum creatinine concentration in absence of other renal disease, urine output <80 mL over 4 hours)
- Thrombocytopaenia (platelet count $<100 \times 10^9$/L)
- Pulmonary oedema
- HELLP syndrome
- Eclampsia
- Fetal growth restriction associated with oligohydramnios and/or abnormal Doppler waveforms.

Note: ISSHP do not include a definition for 'severe preeclampsia', but it's statement references more severe disease as 'complicated preeclampsia' and 'preeclampsia with/without severe hypertension and/or organ dysfunction'. These differences direct management and therefore an inclusion of definition for more severe disease is considered beneficial.

Measurement of blood pressure in pregnancy

Blood pressure should be measured using a standardised technique.

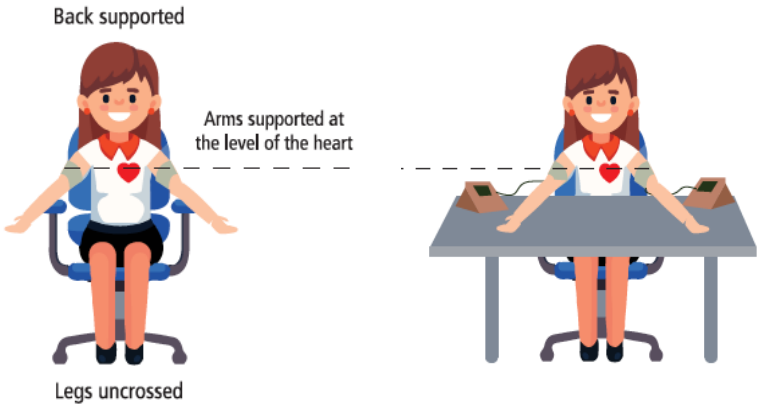
Device: A non-mercury auditory sphygmomanometer used by trained personnel or automated blood pressure monitors **validated for use in pregnancy and preeclampsia**. A list of suitable devices is available at *http://www.dableducational.org/sphygmomanometers/devices_1_clinical.html#ClinTable.*

Cuff size: An appropriately sized cuff with an inflatable bladder covering 80% of the arm circumference. Size of cuff is dependent on the mid-arm circumference: small <22 cm, normal 22–32 cm, large 33–42 cm, thigh >43cm.

Wahine/person position: Sitting with arms well supported at heart level.

Technique: After 5 minutes at rest, measure blood pressure in both arms at first measure (subsequently use same arm as higher recording). Korotkoff phase 1 (first sound - K1) should be used to measure sBP. Korotkoff 5 (disappearance of sounds completely - K5) should be used to measure dBP. Where K5 is absent, accept Korotkoff 4 (muffling - K4).

24-hour ambulatory BP monitoring allows differentiation of white coat hypertension and true hypertension. However, availability and cost limit the extent to which it can be used; conventional BP measurement measured at least four hours apart is considered an appropriate alternative.



Recommended positions for measurement of blood pressure in pregnancy

Images adapted from: The International Federation of Gynecology and Obstetrics (FIGO) initiative on pre-eclampsia: A pragmatic guide for first-trimester screening and prevention. Doi 10.1002/ijgo.12802.

Original images courtesy of PerkinElmer Life and Analytical Sciences

For more information on preterm preeclampsia and hypertensive disorders of pregnancy including access to Taonga Tuku Iho (national best practice guide), you can access the Carosika Collaborative website ***www.carosikacollaborative.co.nz*** *or by using the QR code.*

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