

Pre-eclampsia in Pregnancy

RPA/Canterbury ANSC: Educational Case Study Series – June 2021

Hypertensive disorders affect 8-20% of pregnant women and are associated with substantial complications for the woman and baby including increased risk of maternal morbidity and mortality, increased risk of stillbirth, preterm delivery and intrauterine growth restriction¹. There are long term effects for women with a diagnosis of hypertension in pregnancy including chronic hypertension and increased cardiovascular risk.

Case study:

A healthy 28-year-old female, Amy, Gravida 2 Parity 1, presents to GP at 34 weeks' gestation complaining of a 3-day history of severe headaches and blurry vision. She reports good fetal movements with no vaginal loss. GP took vital signs with BP measuring 160/100. Examination revealed a soft non-tender abdomen with hyper-reflexia with 2 beats of clonus. Urinalysis shows proteinuria 2+. Amy's GP refers her to the delivery ward for further blood tests and assessment.

Hypertension in pregnancy is defined as Systolic BP >140mmHg and/or Diastolic BP >90mmHg in pregnant women greater than 20 weeks gestation². Hypertensive disorders in pregnancy are classified based on their pathophysiology as well as the risks and potential outcomes for both mother and baby. As per the SOMANZ guidelines there are four major classifications²:

- 1. Preeclampsia-eclampsia*
- 2. Gestational hypertension*
- 3. Chronic hypertension: Essential, Secondary or White Coat*
- 4. Pre-eclampsia superimposed on chronic hypertension*

Note: For the purpose of this case study, we will be focusing on pre-eclampsia only.

Amy presented to delivery ward for further assessment. Her BP measured 160/95 and had a soft non-tender abdomen and a normal CTG on examination. Blood tests showed moderately elevated transaminase levels, normal platelet count, normal creatinine and haematocrit. Her urine protein creatinine ratio returned at 45mg/mmol.

Any woman presenting with hypertension after 20 weeks of gestation should be assessed for signs and symptoms of pre-eclampsia. The presence of severe hypertension, headache, epigastric pain, oliguria or nausea and vomiting are ominous signs which should lead to urgent admission and management, as should any concern about fetal wellbeing. Fetal well-being should be assessed with a CTG and a growth and wellbeing ultrasound as soon as possible

Amy's BP profile remained elevated and she was commenced on Labetalol. She was admitted for BP monitoring/stabilisation and an ultrasound that showed normal fetal growth and wellbeing.

Pre-eclampsia is a progressive disorder that can worsen throughout pregnancy. Current therapy does not ameliorate the placental pathology nor alter the pathophysiology or natural history of pre-eclampsia. Delivery is the definitive management and is followed by resolution, generally over a few days but sometimes much longer. At mature gestational age, delivery should not be delayed. However, in earlier gestations, BP and fetal wellbeing should be routinely monitored³. In women with gestational hypertension, consider the following risk factors that may require additional assessment and follow-up⁴:

- Nulliparity*
- Pregnancy interval >10yrs*
- BMI >35*
- Previous history of pre-eclampsia*
- >40 years*
- Multiple pregnancy*
- Family history of pre-eclampsia*
- Pre-existing vascular or kidney disease*

Amy's BP stabilised over the next two days, and she was discharged on Labetalol. A plan was made for her to return to the Hypertensive Disease in Pregnancy Clinic for follow-up. Her management plan included twice weekly pre-eclampsia bloods with fortnightly growth and wellbeing scans. Amy returned 2 weeks later to the day assessment unit with symptoms of headache that did not improve with analgesia and blurry vision. On examination, BP was 170/100 with a normal CTG and fetal well-being ultrasound. Bloods showed elevated transaminases and abnormal platelet count which continued to deteriorate over the next few days. An induction of labour was discussed and offered to Amy due to her worsening pre-eclampsia. She was happy to proceed with this and on assessment, her cervix was found to be favourable. She underwent a rupture of membranes at 36 weeks and progressed to have vaginal delivery of a baby girl.

The HYPITAT study is a multicentre, unblinded study comparing outcomes after induction of labour and expectant monitoring in pregnant women with gestational hypertension or mild preeclampsia between 36 and 41 weeks' gestation. The study reported that immediate induction of labour was associated with a reduction in the incidence of severe hypertension, without an increase in the Caesarean section rate⁵. No significant difference was seen in important clinical morbidity outcomes such as HELLP, thromboembolism, eclampsia or placental abruption and costs were not increased. This management approach was beneficial even in those women whose cervix was unfavourable for induction of labour.

Amy remained an inpatient for 4 days postpartum for BP monitoring and was discharged on Labetalol with a plan to see her GP regularly to titrate the dosage as needed. She was advised to seek early obstetric care in her next pregnancy for counselling and preventative management due to her pre-eclampsia diagnosis.

Resolution of pre-eclampsia can occur after delivery. It is important that BP and blood profile is monitored up to day 4 post-partum. Hypertension can persist for days, weeks or up to three months and will require monitoring and slow withdrawal of antihypertensive therapy. Resolution is assured if the diagnosis was pre-eclampsia and there is no other underlying medical disorder. All women with pre-eclampsia and gestational hypertension are at risk of these disorders in future pregnancies, so they should receive appropriate counselling before embarking upon another pregnancy⁶.

Dr Mauli Jhala & Dr Hend Chatila

Obstetrics and Gynaecology Department, Royal Prince Alfred Hospital

References

1. Visintin, C., Mugglestone, M.A., Almerie, M.Q., Nherera, L.M., James, D. and Walkinshaw, S., 2010. Management of hypertensive disorders during pregnancy: summary of NICE guidance. *Bmj*, 341
2. Lowe, S.A., Bowyer, L., Lust, K., McMAHON, L.P., Morton, M., North, R.A., Paech, M. and Said, J.M., 2014. Guidelines for the management of hypertensive disorders of pregnancy 2008. *Australian and New Zealand Journal of Obstetrics and Gynaecology*, 49(3), pp.242-246.
3. Redman, C.W.G., 2011. Hypertension in pregnancy: the NICE guidelines. *Heart*, 97(23), pp.1967-1969
4. American College of Obstetricians and Gynecologists, 2020. Gestational hypertension and preeclampsia: ACOG Practice Bulletin, number 222. *Obstetrics and gynecology*, 135(6), pp.e237-e260.
5. Koopmans, C.M., Bijlenga, D., Groen, H., Vijgen, S.M., Aarnoudse, J.G., Bekedam, D.J., van den Berg, P.P., de Boer, K., Burggraaff, J.M., Bloemenkamp, K.W. and Drogtop, A.P., 2009. Induction of labour versus expectant monitoring for gestational hypertension or mild pre-eclampsia after 36 weeks' gestation (HYPITAT): a multicentre, open-label randomised controlled trial. *The Lancet*, 374(9694), pp.979-988.
6. Sydney Local Health District, 2016. Royal Prince Alfred Guidelines, Women and babies, *Hypertensive Disorders of Pregnancy (HDP)*.