

# HELLP Syndrome

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graph TD; A[HELLP Syndrome] --- B[Haemolysis]; A --- C[Elevated liver enzymes]; A --- D[Low platelets];
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**Haemolysis**

**Elevated liver enzymes**

**Low platelets**



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# Background

Pregnancy  
Induced  
Hypertension

BP140/90 mmHg or more in the second half of pregnancy in the absence of proteinuria or other markers of pre-eclampsia

Pre-  
eclampsia

BP140/90 mmHg or more on two separate occasions after the 20th week of pregnancy in a previously normotensive woman accompanied by significant proteinuria (300 mg in 24 hours)

Severe  
Pre-  
eclampsia

The occurrence of BP 160 systolic or 110 diastolic in the presence of significant proteinuria (1g/24h or 2+ on dipstick), or if maternal complications occur

Eclampsia

The occurrence of a tonic-clonic seizure in association with a diagnosis of pre-eclampsia



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# HELLP syndrome

This is a serious complication regarded by most as a variant of severe pre-eclampsia which manifests with

**H** - Haemolysis

**EL** - Elevated Liver enzymes

**LP** - Low Platelets



# HELLP syndrome

May be associated with disseminated intravascular coagulation, placental abruption and fetal death

Liver enzymes↑ and platelets↓ before haemolysis occurs

Syndrome usually self-limiting, but permanent liver or renal damage may occur



# Incidence

Seen in 5–20% of cases of severe pre-eclampsia

More common in multiparous women

Maternal mortality is estimated at 1%, with perinatal mortality estimates of 10–60%



# HELLP Syndrome

## Symptoms

- Epigastric or RUQ pain (65%)
- Nausea and vomiting (35%)
- Urine is 'tea-coloured' due to haemolysis - haematuria
- Generalized oedema and significant weight gain
- Feeling unwell with flu-like symptoms

## Signs

- Tenderness in RUQ
- ↑BP & proteinuria
- Jaundice



# Investigations

## FBC & Blood film

- Fragmented RBC
- ↑ Reticulocytes
- Thrombocytopenia  $<150 \times 10^9/L$

## LDH

- ↑ in haemolysis (  $>600\text{iu/L}$  )

## LFT

- ↑ Transaminases
- ↑ Bilirubin

## Clotting tests

- DIC complicates HELLP in about 20% of cases

## Liver USS

- Exclude hematoma



# Management

Delivery is indicated

Treatment is supportive and as for eclampsia (MgSO<sub>4</sub> is indicated)

Although platelet levels may be very low, platelet infusions are only required if bleeding, or for surgery and  $<40$





# Management of HELLP Syndrome

Call for help

Airway, Breathing, and Circulation plus  
IV access

MgSO<sub>4</sub> is the drug of choice for both control  
of fits and preventing (further) seizures

A loading dose of 4g given over 5–10min  
followed by an infusion of 1g/h for 24h

If further fits occur a further 2g of  
MgSO<sub>4</sub> can be given as a bolus



# Management of HELLP Syndrome

In repeated seizures use diazepam

If still the patient has fits, may need intubation and ventilation

Monitor pulse, BP, respiration rate, and oxygen saturations every 15min

A urometer and hourly urine

Assessment of reflexes every hour for Magnesium toxicity



# Mgso<sub>4</sub> Toxicity

MgSO<sub>4</sub> toxicity is characterized by;

- Confusion
- Loss of reflexes
- Respiratory depression an
- Hypotension

Half/stop infusion if oliguric (<20mL/h) or raised creatinine and seek senior specialist advice

If toxic – Administer 1g Calcium Gluconate over 10min



# Management of HELLP Syndrome

If BP >160/110, give BP-lowering drugs:

- Oral nifedipine
- IV labetalol (avoid in asthmatics)

Fluid restriction : to 80mL/h or 1mL/kg/h due to the risk of pulmonary edema (even if oliguric the risk of renal failure is small); monitor the renal function with the creatinine

A CVP line may be needed if there is associated maternal haemorrhage and fluid balance is difficult or if the creatinine rises



# Management of HELLP Syndrome

- The fetus should be continuously monitored with CTG
- Deliver the fetus once the mother is stable
- Vaginal delivery is **not contraindicated** if cervix is favourable
- If HELLP syndrome coexists, consider high-dose steroids and involvement of renal and liver physicians
- Third stage of labour should be managed with 5–10U oxytocin, rather than syntometrine or ergometrine because of increase in BP



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