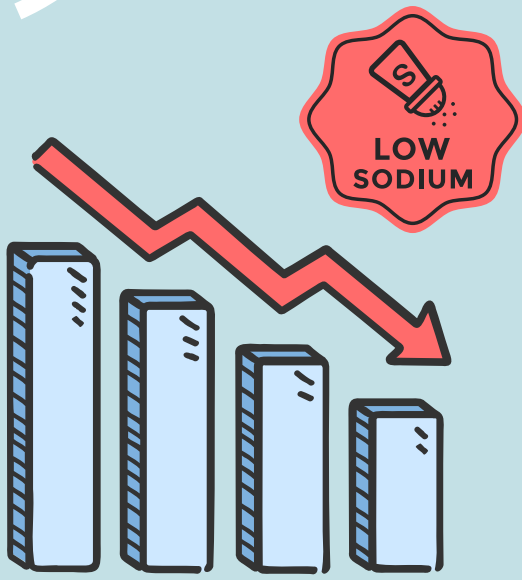


Sodium and Seizures in Pregnancy

Belinda An, Triveni Nanda | Department of Obstetrics & Gynaecology
Coffs Harbour Health Campus | Mid North Coast Local Health District

Background



Mild physiological hyponatremia is common during pregnancy. However, when combined with other common peripartum factors such as **preeclampsia (PET)** and **excessive fluid intake**, this can lead to **severe hyponatremia**. Severe hyponatremia in pregnancy is rare but carries significant risks to mother and fetus, including life-threatening neurological complications such as **grand mal tonic-clonic convulsions**.

Antepartum

23y.o. nullipara at **40+2 weeks** of gestation was sent from midwives' clinic for review of **borderline BP 135/85**

- Booking BP 100/60
- **Normal BP readings** on 2-hr profile, PET not diagnosed
- **Discharged home** prior to reviewing blood results

Antenatal course was otherwise uncomplicated. Patient **declined IOL at 41 weeks**, requesting 42 weeks. No abnormalities noted on 41+5 postdates assessment

- BP 120/68
- **Booked for cervical ripening 41+6, IOL 42 weeks**

Intrapartum

Time (24hr)	Cervical dilatation (cm)	BP
2100	3	Nil recorded
0400	6	145/92
0600	6, feeling urge to push	Nil recorded
0640		150/88, headache

Registrar informed of elevated BP 150/88, requested that patient exit bath for assessment

- 10min later, patient had a **generalized tonic-clonic seizure** whilst exiting bath
- **MgSO4 infusion commenced. BP normalised** to 124/72 **without intervention**
- Seizure **spontaneously resolved** after 1.5min

- VBG: **severe hyponatremia (120), lactate 11.8, acidosis (pH 7.163)**. Patient stabilised with ABCDE
- Significant **post-ictal** phase following episode
- **0720: still 6cm dilated**. Consideration for **EMCS for failure to progress (FTP)**

***Issues with patient's significant ongoing confusion secondary to hyponatremia**, causing difficulty with shared decision making and consent. ➤ **Tertiary hospital O&G consulted** re. delivery planning; agreed with EMCS for FTP

- **MDT discussion** with tertiary hospital obstetric anaesthetist in context of severe hyponatremia. Decision to proceed with **spinal anaesthesia** ➤ **Uncomplicated CS**

Postpartum

Admitted to ICU for **slow correction of hyponatremia** with IV fluids

On retrospective review:

- 40+2 BPP bloods: **raised Cr 82, ALT 63, AST 48 = missed PET diagnosis**
- Oral fluid intake >8L** in 36 hours preceding delivery = **water intoxication and hypervolaemic hyponatremia**
- D1: fluid restricted to **500mL** with **massive diuresis**. Commenced on enalapril 5mg BD for PET

- Na improved from **119 > 133** in **24 hrs** with nil complications. **Patient was confused with nil recollection of events for 48h.**

Renal team recommendations:

- Change to **Nifedipine XR 30mg BD**
- Fluid restrict **1.5L/day**
- Prophylactic aspirin and calcium** for future pregnancies

Neonatal

LFI, Apgars 9, 9, BW 3870g
A pH 7.27, lactate 4.8, BE -4.3, **Na 116**
V pH 7.32, lactate 4.2, BE -4.9, **Na 115**

NETS recommendations:

- Monitor in SCN ➤ **6-hrly EUC, VBG**
- Oral Na supp. 6mmol/kg/day** (aim Na increase by 2mmol/L/6hr)
- Antibiotic cover** for sepsis
- Monitor for convulsions/hypertonia**
- Remained stable, Na gradually improved > **128** with nil complications

Case History

Whilst rare, patients with PET are at **increased risk of severe hyponatremia**, particularly in the context of **hypervolemia** or **SIADH**. Severe hyponatremia is associated with increased risk of **maternal seizures and neonatal hyponatremia, jaundice or seizures**.

- For PET patients, **fluid balance** and findings of **electrolyte abnormalities during labour** should be carefully considered to facilitate **timely management with BP control, fluid restriction and electrolyte monitoring**.
- **Multidisciplinary decision-making** regarding **delivery planning and anaesthetic management** is essential to **minimize further precipitation** of maternal seizure activity and neonatal compromise.

Discussion