Critical Care Obstetrics: A case of postpartum respiratory failure complicated by preeclampsia, acute kidney injury, and hyponatremia.

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Background

- Respiratory failure occurs in 1 in 500 pregnancies, most commonly in the postpartum period.¹
- We present the case of a patient with BMI 61 kg/m², preeclampsia (PEC) with severe features, acute kidney injury (AKI), with post-cesarean respiratory failure and hypovolemic hyponatremia.

Case

- A 33-year-old G3P2 with prior cesarean delivery (CD) was admitted at 32+6 weeks with PEC with severe features (BP 165/67mmHg and headache).
- Nifedipine was initiated and betamethasone given with plan for CD at 34 weeks.
- COVID+ at 33+2
- Tachycardic 3 days later, and CT PE with IV contrast was non-diagnostic
- She developed AKI (creatinine 0.61 to 0.93) attributed to worsening PEC, IV contrast administration, and COVID infection.
- Repeat CD the next day (33+6 weeks) for worsening PEC with severe features and AKI.



Lapinsky SE. Management of Acute Respiratory Failure in Pregnancy.

Anaesth 2018:120:228-40



Case

- A CSE was performed (LOR 12.5cm) with intrathecal hyperbaric bupivacaine 0.75% 1.8 mL, fentanyl 15 mcg, morphine 150 mcg, and clonidine 30 mcg.
- Quantitative blood loss was 400 mL with 1.5L lactated ringers given.
- The case was unremarkable.
- POD1 she remained tachycardic and developed a new O₂ requirement.
- CXR showed vascular congestion.
- Serum Na⁺ 129
- POD2 worsening dyspnea and orthopnea. O₂sat low 90's on 3L
- Serum Na⁺ 120, Cr now 1.42
- CXR worsening multifocal interstitial edema and patchy opacities.
- TTE normal. Furosemide and oral urea given





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125 👻	131 👻	136 👻	138	
POD3	POD3	POD3	POD4	
08:13	14:22	21:58	02:43	

Case

- **POD3** confusion, worsening hypoxia, admitted to MICU for high flow nasal cannula, hypertonic saline, furosemide, dexamethasone, and remdesivir treatment
- **POD4** hyponatremia resolved, and respiratory status improved.
- **POD8** discharged with a healthy infant.

Discussion

- COVID, PEC, AKI, and BMI 61 resulted in respiratory decompensation and ICU admission.
- We suspect that severe PEC and AKI resulted in pulmonary edema with an intravascular depletion that led to hypovolemic hyponatremia with syndrome of inappropriate antidiuretic hormone secretion (SIADH).
- Hyponatremia may indicate the severity of preeclampsia.^{2,3}
- Worsening hyponatremia may be a hallmark of potential respiratory failure in PEC with severe features.



2. Remer, Chen, Porat, Shay, Levit, Lorinne and Amsalem, Hagai. "Hyponatremia among preeclampsia patients – a potential sign of severity 3. Powel JE, Rosenthal E, Roman A, Chasen ST, Berghella V. Preeclampsia and low sodium (PALS): A case and systematic review. Eur J Obstet Gynecol Reprod Biol. 2020 Jun

