

Near Fatal Asthmatic Exacerbation in Pregnancy

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Background

Asthma

- Affects 8.8% of parturients
- Pregnancy may increase asthmatic exacerbations
 - Increased risk of low birth weight, preterm delivery

Case Presentation

34F at 32 weeks presented with SOB, normal / stable vital signs, reassuring FHR presented to OB ED

- Moderate-persistent asthma
- Peak flow: 150L/min.

Initial treatment:

- Inhaled beta-2 agonists
- Oral steroids

OB anesthesia team not notified at this time

2 hours after initial treatment:

- Worsened respiratory distress
- RA Oxygen saturation 60%, improved to 80% on non-rebreather mask
- Tachycardia, hypotension, and AMS

Rapid response team called (critical care; obstetric anesthesia also notified at this time)

Rapid Response

- IV lines, patient and FHR monitors lost due to patient agitation
 - Tibial intraosseous line placed
- Critical care decision for orotracheal intubation
 - Initially to be induced with etomidate and rocuronium → advised to use propofol and succinylcholine by anesthesia
 - Initial attempt with size 7.5 ETT and Glidescope unsuccessful; second attempt successful with smaller ETT
- Oxygen saturation improved to 95% after endotracheal ventilation

Fetal bradycardia noted afterwards and patient moved emergently to OR for cesarean section under general anesthesia

Intraoperative course

- Persistent high peak airway pressures and low tidal volumes,
- Frequent desaturation to low 80%s
- Unresponsive to albuterol and magnesium
- Maintained on FiO2 of 1.0 and PCV
- Epinephrine infusion initiated with tidal volume improvement

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ARTERIAL BLOOD GAS			
pH, Arterial	6.93 * ▼	7.01 ▼	7.22 ▼
pCO2, Arterial	>100 * ▲	>100 ▲	59 ▲
pO2, Arterial	402 ▲	401 ▲	487 ▲
Base Excess, Arterial	-6 ▼	-5	-3
HCO3, Arterial	25	25	23
Sodium, Arterial	136	133 ▼	134 ▼
Potassium, Arterial		6.2 ▲	4.0
Glucose, Blood Gas...	228 ▲	194 ▲	325 ▲
Lactic Acid, Blood...	3.0 ▲	<1.0	1.4
Lactic Acid			
Calcium, Ionized, ...	1.10	1.04 ▼	1.15
Total Hemoglobin, ...	10.6 ▼	12.4	11.0 ▼
Methemoglobin, Art...	<1.0	1.4	<1.0
Carboxyhemoglobin,...	<1.0	<1.0	<1.0
Arterial, Oxygen S...	97.3 ▲	97.0 ▲	98.4 ▲

Case Conclusion and Discussion

- Postoperative ICU placement
 - Weaned from epinephrine, extubated on POD2
- Neonate with poor respiratory effort and muscle tone
 - NICU stay, discharged home after 22 days.

Critical care rapid response team - institution dependent

- Unfamiliarity with management of pregnant patients
- Delayed intubation and terminal fetal bradycardia

Multidisciplinary simulation and education of all personnel involved in the care of obstetric patients

- Management of obstetric airway
- Recognition of respiratory emergencies and early notification of anesthesia
- Identification of the rapid response leader
- Availability of obstetric code carts