**Case Study (single patient chart review)**

- 23 y/o pregnant female (29 weeks gestation)
  - No past medical history (two prior uncomplicated pregnancies)
  - Presented with dyspnea, chest pain and abdominal cramping
  - Prior episode of ITP earlier in pregnancy
  - Denies any medication use or recent chemical exposure

**Emergency department course & assessment**

- Heart rate 100 beats/minute; O₂ saturation ~80% on NRB mask
- Perioral cyanosis noted
- ABG with co-oximetry: methemoglobin 29.8%
- Fetal monitoring with no fetal distress
- Patient has dyspnea, chest pain, cramping and palpitations
- 60 mg (1 mg/kg) IV methylene blue administered
  - Symptoms resolve within minutes
  - Repeat methemoglobin (1 hour post): 2%

**Patient admitted to ICU**

- Methemoglobin level (following day): 10.8%
- Partial exchange transfusion with 2 units of PRBC is performed
  - Methemoglobin level only minimally changed: 8% and doesn’t fluctuate dramatically (8.1-10.7%) for rest of hospital stay

**Genetic testing reveals cytochrome b5 reductase deficiency**

- Healthy baby delivered at term without further complications
- Delivery did not precipitate exacerbation of methemoglobinemia

**Background**

- Most cases of methemoglobinemia are acquired
  - Typically occur after exposure to oxidizing agent
- Methemoglobinemia may occur spontaneously after physiologic stress in patients with cytochrome b5 reductase deficiency
- Little data exist on safety of IV methylene blue for treatment of methemoglobinemia during pregnancy
  - Intra-amniotic administration to test membrane rupture was associated with hemolytic anemia, intestinal atresia, and fetal death
  - Contraindicated for use in obstetric procedures
- IV methylene blue rapidly reverses methemoglobinemia
  - Both for acquired and congenital cases
- Exchange transfusion also effective but requires more resources

**Discussion**

- Our patient’s concerning and precipitous symptoms prompted the methylene blue administration

**Limitations**

- Single patient case report

**Conclusion**

- IV methylene blue rapidly reversed methemoglobinemia in our patient.