Anything can happen and it probably will

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PICTUREQUOTES.com
Traumatic Arrest of the Obstetric Patient
4% OF THE BIOLOGICAL FEMALE POPULATION IS GRAVID
\[ x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} \]
168,000,000 / 4% = 6,720,000 PREGNANCIES ON ANY GIVEN DAY
1:30,000 pregnancies result in cardiac arrest
6,720,000 / 30,000 = 224 Will Suffer a Cardiac Arrest
In Hospital Arrests have a 15-20% Survival Rate
MOTOR VEHICLE ACCIDENTS FOLLOWED BY DOMESTIC PARTNER VIOLENCE ARE THE TWO LEADING CAUSES OF MATERNAL MAJOR TRAUMA
\[ x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} \]
2% OF ALL MATERNAL ARRESTS ARE DUE TO TRAUMATIC ETIOLOGY
224 (Cardiac Arrest Victims) / 2% = 4.5
TRAUMATIC ARRESTS
Fail to prepare...
...prepare to fail
“There is good evidence to recommend clinical preventive action”
First Rule of OB Assessment?
WHEN IS IT OKAY TO ASK A WOMAN IF SHE IS PREGNANT?
Physiological Changes to Remember

• Increased cardiac output of up to 40%
  • May see Left XD
• Upper airway: pharynx and larynx edema occur as a result of hormonal effects and may reduce visualization during laryngoscopy
Physiological Changes to Remember

- Aortocaval (IVC) compression as early as 20 weeks gestation
- 20% increased oxygen consumption
- Minute ventilation rise by 50% at term
Resuscitation Changes: C-Circulation

- Compressions 120/min
  - Mechanical devices not recommended
- Manual displacement of the Uterus
  - Left lateral displacement off the great vessels to maximize flow
- Fluids wide open
- Consider Blood Products O-
Resuscitation Changes: A- Airway Management

• 100% FIO2
  • Maintain saturations above 95%
  • Preoxygenate with high flow nasal canula and 2 thumbs up BVM technique
• Early intubation is recommended
  • Smaller diameter tube (6-6.5 recommended)
• Boujie is recommended to maximize success potential
• Only 1 field attempt due to increased laryngeal edema
• Have backup airways at hand
Resuscitation Changes: B - Breathing

- Maintain SPO2 95%
- Lower tidal volume/ greater minute volume
  - Decrease in residual capacity due to elevated diaphragm
- Higher rate
  - To compensate for lower tidal volumes, increase minute volume.
- Target ETCO2 greater than 10mm/Hg
  - Change greater than 10 points indicative of ROSC.
Resuscitation Changes: D- Defibrillation

• Defibrillation
  • Transthoracic impedance remains unchanged during pregnancy compared with the nonpregnant state
  • Expected to pass minimal energy to the fetus and is considered safe in all stages of pregnancy
SURVIVAL?
BEST CHANCE OF FETAL SURVIVAL, IS MOM SURVIVAL
MOM’S BEST CHANCE OF SURVIVAL IS: REMOVE THE PARASITE
YOU'VE GOT A PARASITE

IT'S A BABY
• C - Circulation
• A - Airway
• B - Breathing
• D - Defibrillate

E – Extract the Fetus
A Caesarean section should be performed for viable pregnancies (≥ 23 weeks) no later than 4-5 minutes (when possible) following maternal cardiac arrest to aid with maternal resuscitation and fetal salvage.
Scene size-up

• 26 Y/O Single occupant MVA
• Unknown rate of speed
• Unrestrained
• Ejected through windshield and thrown 30-40 ft
• Pulseless and apneic on initial EMR arrival
• Initial report states possibly pregnant of unknown gestation
• CPR is in progress upon ambulance arrival
• Asystole noted on initial monitor placement
• Air Transport is inbound: ETA 20 min
Assessment:

• Crepitus was found to the back of pt's head
• Significant step-off noted to cervical spine
• Blood and CSF noted to be expelled with every ventilation
• Fundal assessment confirms suspected pregnancy
Treatment

• ACLS measures initiated
  • IO: 2 rounds of EPI
  • **BLS Airway**

• Crew decides to begin rapid ground transport to local community hospital

• Crew communicates with hospital to secure emergent OR suite

• On arrival to OR fetus is rapidly extricated

• NRP algorithms are followed and fetus is resus but requires ventilatory support.
Outcome:

• Mom showed no improvement in condition upon extracting the fetus and was pronounced in the OR

• Infant is transported to level 1 NICU with specialty team requiring only ventilatory support.
  • Remember perimortem C-section is recommended within 4 minutes of initial arrest- this case was 35 minutes

• Maternal Grandmother opted against further neurological testing and chooses to remove all life support measures for the infant 36 hours later, because of the uncertainty in long term care of an infant at the grandmothers age and stage of life.
Takeaways:

• Remember moms' physiological changes
• Remember modifications to CPR
• Keep the ER/OR in the loop
• Crew mental health after the event
"Cardiopulmonary Resuscitation" - uttered his colleague!
For the first time the white coat feared a rescue!!
After all it was the fight of her superhero!!

_Shefali Sachar_
Citations


