



Physiological changes during pregnancy/Obstetric Emergencies

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Why important?



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1000 women die every day due to pregnancy/delivery related causes





A B C

Airway Breathing Circulation

Simple systematic strategies make great difference

**Common Goal = Reduced maternal
mortality rate**



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Teamwork and Communication



Anaesthetist + Obstetrician =



Common Goal = Reduced maternal mortality rate



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Airway

Difficult intubation

- The mucosa of the nasopharynx /larynx /trachea becomes hyperemic and oedematous due to increased oestrogen and bloodflow.
- Preeclampsia
- 10 x more common with difficult intubation in late pregnancy

Be prepared!



Airway



Increased risk for pulmonary aspiration

- Increased intragastric pressure
- Decreased tone in the lower esophageal sfincter
- Slower gastric emptying time during labour
- Preeclampsia/Eclampsia, Pain; Labour, Abrutio placentae, Uterine rupture

Be prepared!





Breathing

Lowered maternal oxygen reserve

(Increased O₂ consumption + decreased FRC)

- Apnea: More rapid onset of hypoxia
- Worse in supine position
- Pain, anxiety, multiple fetus, obesity

Oxygen!! Lateral tilt!!





Circulation

Physiological preparation for delivery

- Increased blood volume 45-50%
- Increased cardiac output 50%
- Increased stroke volume 30%
- Decreased systemic vascular resistance, SVR





Circulation

Limited compensatory capacity

- Blood volume increases 45% - 50%
- Plasma volume increases 45%
- Red cell volume increases 20%

Bleeding > 500 ml, prepare for fluid/transfusion





Circulation

Vena Cava Syndrome

- Cardiac Output and Blood Pressure in late pregnancy depends on maternal position
- Highest CO in the left or right lateral position
- Lowest CO in the supine position

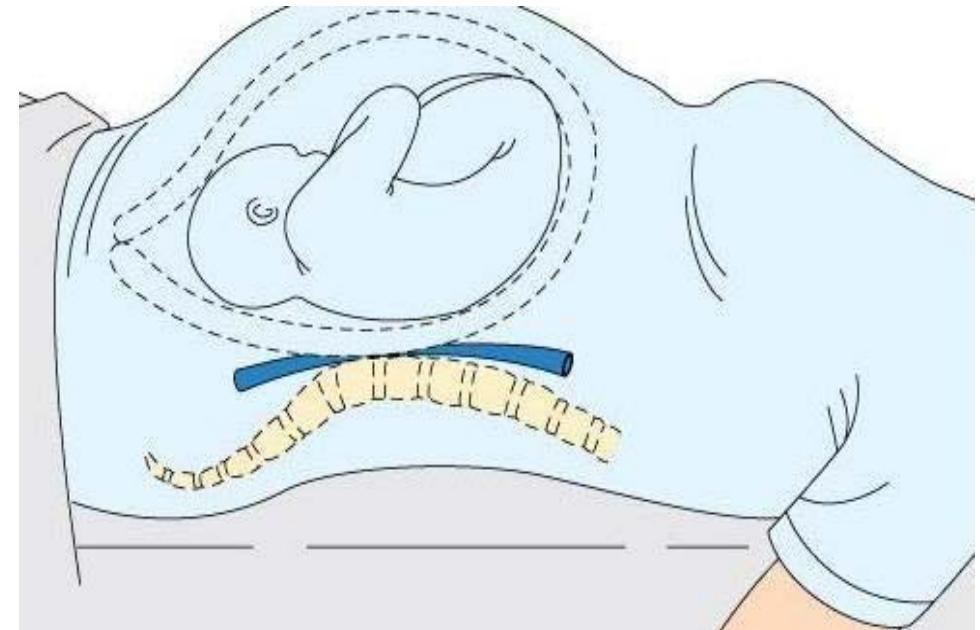
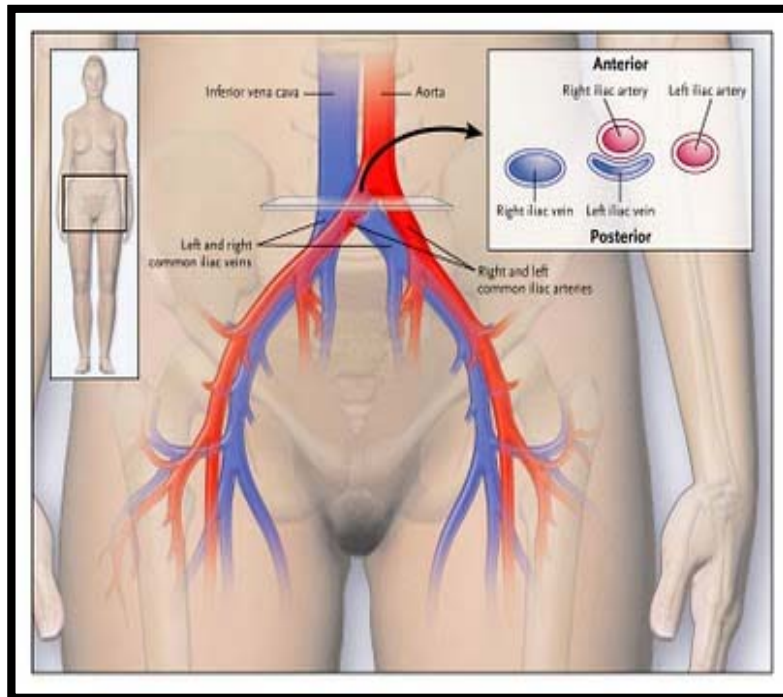
Left lateral tilt!



Circulation



Vena Cava Syndrome



Circulation



Hypotension

- SVR is 20% lower in term pregnancy compared to the non-pregnant state.
- GA, Spinal
- Hypovolemia: Bleeding. Prolonged labour → dehydration

Fluid! Lateral tilt





Circulation

Hypotension

- Utero-Placental bloodflow increases during pregnancy
- No autoregulation
- Dependent on the perfusion –pressure
- Bleeding, Preeclampsia, Abruptio placentae,

Blood pressure! Lateral tilt! Fluid!



Summary



A: Difficult intubation

B: Apnea; Hypoxic after 1 minute

C: Hypotension; Fluid. Lateral tilt

Teamwork and communication



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