Anaesthesia1ST

1st Class Anaesthesia for All Patients

SUMMARY: CAESAREAN SECTIONS PART 1
The physiology of the pregnant bitch

Reduced anaesthetic/CNS depressant drug requirements	Reduce doses by 25-40%

Increased blood volume	Increases by approx. 40% at term
Relative anaemia of pregnancy	Heamatocrit = 30-35% at full term. If PCV is normal at time of C-section consider maternal dehydration
Increased cardiac output	Increases by 30-50% at term
Diversion of cardiac output	25% maternal cardiac output diverted to placenta & uterus
Attenuated baroreceptor reflex	Compensatory mechanisms may be delayed or fail if hypovolaemia or hypotension occur
Elevated myocardial contractility	May approach maximum at full term.
If pre-existing maternal heart disease:	Dam may rapidly decompensate (reduced cardiac reserve)
Compromised cardiac output/hypotension	Supine position = mechanical pressure from gravid uterus on major blood vessels.
No foetal autoregulation of blood flow	Maternal hypotension/hypovolaemia will reduce foetal perfusion
Epidural space reduced by 30-50%	Epidural drug requirements reduced

Increased metabolic rate	Affects oxygen consumption, tidal volume & respiratory rate
Increased oxygen consumption	Increased by 20%
Increased tidal volume	40%
Increased respiratory rate	10%
Increased sensitivity of respiratory centre to carbon dioxide	Normal ETCO2 may be as low as 30-33mmHg
Reduced lung volume	Via cranial displacement of diaphragm by gravid uterus
Reduction in functional residual capacity (FRC)	Approx. 20%
Compression atelectasis	Diaphragm displaced cranially by gravid uterus
Increased risk of hypoxaemia	Via decreased maternal FRC & increased oxygen demand.
Maternal hypoxaemia = significant foetal hypoxaemia	Foetal Hb has high affinity for oxygen

Reduced gastric/oesophageal sphincter tone	Increased risk of intra-operative regurgitation & aspiration

Reduced BUN	Increased CO = increased renal blood flow & GFR
Reduced creatinine	Increased CO = increased renal blood flow & GFR
Insulin resistance	Risk of hyperglycaemia

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