ICM management of the Obstetric Patient including Covid19 infection

If concerns, contact ICM consultant and/or obstetric anaesthetist for an urgent review.

Remember Aortacaval compression from 20 weeks onwards		
For COVID patients Update family outside if not in room.	Regarding maternal condition Foetal/baby condition COVID-19/medical conditions Obstetric conditions	**In addition to normal risks** – discuss risks of delay due to PPE precautions, hypoxemia due to Covid-19, difficult intubation risks to mother and baby, **Once intubated** – Plan, where will mum and baby go? Scribe discussion and plan
For COVID patients Preparation outside the isolation room	**Drugs, Drips, Kit, Delegate** Propofol Infusion for transfer - Delegate Refer to ICU protocol for drug dilution Drip - Hartmans – Not in pump. Kit as needed- acquire missing PPE, infusion pumps, monitor, intubation aids, ?Oxford pillow, ventilator, oxygen cylinders, trolley, ECO2, inline suction, drugs,	**PPE** buddy system, **Team**- Airway team, Outreach, ICM, Porters **Roles identified**- Intubator, assistant, runner, drugs, cricoid **Plans identified** s - A B C D, Intubation checklist **Help sources** - phone/ bleep numbers. Copy of notes for ICM - delegate
Induction drugs (Discretion of anesthetist)	Sodium Citrate/Omeprazole 20mg oral Thiopentone 3-6 mg/kg/ Propofol 1.5-2.5mg/kg Suxamethonium 1.5 mg/kg **If delivering baby require uterotonics** **If delivering require resucitaire**	**Resuscitation drugs** Phenylephrine, Metaraminol, Glycopyrrolate, **Muscle relaxants**-Atracurium, Rocuronium Propofol infusion for transfer **Oxytocin 5IU / 5mls, Infusion 40IU in 40mls saline** **From delivery suite**
Rapid desaturation **Airway** **No bagging before ETT if COVID patient**	**No bagging before ETT if COVID patient** Use Intubation checklist Pre-oxygenation with CPAP to ETO_2 >95% **Aortocaval compression - Tilt**	Tilt /position /pillows/ Oxford pillow if needed. Video laryngoscope /bougie/filters/ tube tie/ catheter mount /ECO_2/ Assistant for cricoid
ETT, CVC, NG Tube CXR	ETT female: 7; ECO2 CVC: 4 lumen in to the hilt. Stitched at hub Arterial Line Fine bore NG	Have ETT clamp by bedside for planned disconnections for COVID Connect in-line suction for COVID Sputum sample for virology whilst in PPE for COVID Blood cultures
Sedation if antenatal (Discretion)	2% Propofol 5-15 mls/hour Alfentanil 25 mg/50ml 2-5 mls/hr. Consider use of Remifentanil if delivery imminent	**Must inform pediatrician**, anaesthetist and obstetrician prior to delivery regarding **opiate infusion** as baby may require resuscitation and NNU admission
Sedation if postnatal	2% Propofol 5-15ml/hr. 25mg/50ml Alfentanil 2-5ml/hr.	Titrate sedation to RAS-score set by ICU consultant
Positioning	**Aorta caval compression** Also consider in morbidly obese patient with gestation less than 20 weeks If Proning modifications may be required	30° head up tilt May require left or right tilt if haemodynamically compromised despite 15-30-degree tilt Remember to allow for foetal monitoring if proned. If unable to prone use L/R tilt
Initial ventilator settings	PSIMV FiO_2 1.0, PEEP10 RR 15/min TV 6-8ml/kg (ideal body weight.)	Peak airway pressures < 30 cm H_2O Estimate body weight I:E ratio 1:2. Go to 1:1 if poor oxygenation
Acceptable limits	SpO_2 > 95 % PaO_2 > 10.0Kpa (12.5-14) PaCO2< 4.5Kpa (3.5 - 4.6) pH > 7.35 (7.4-7.47)	**Wean FiO_2 to Sats of > 95%**
Paralyse & consider Proning if:	FiO_2 >0.8, with PaO_2 <8 kPa Unable to get SpO_2 >88% Peak airway pressures >30 cm H_2O Check lines/ETT if Proning	Ensure adequate sedation Atracurium 50 mg stat, then 40mg/hour infusion. **May have to position laterally due to gravid uterus** **Pronation performed under ICU cons supervision**
Blood Pressure (see overleaf)	**Aorta caval compression** Accept MAP >65mm Hg Noradrenaline first line (while waiting for CVC, can start Metaraminol/ phenylephrine) Consult ICU protocol for drug dilution	**If bleeding Major Hemorrhage Protocol** If Noradrenaline >20ml/hr, discuss with ICU consultant Consider adding: Vasopressin, Adrenaline or Dobutamine Hydrocortisone 50mg TDS

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Blood Tests	ABG 4-6 hourly U&E, Mg, LFT, CRP, glucose FBC, Coagulation, Xmatch if bleeding risk Uric acid, PCR, PLGF, Antiphospholipid antibodies, Protein C ,S	Full admission screen Sputum/Swabs for virology. COVID -19, Influenza A&B PET PE/VTE
Prescriptions/Drugs Consider	Consider antenatal Dexamethasone Mg infusion Hemorrhage-Tranexemic acid/ blood products Haemabate 250ug IM/ Ergometrine -if no PET Enoxaparin 40mg OD PET - Mg/Labetalol/Hydralazine/Nifedipine Omeprazole 20mg	For foetal lung maturation if < 36weeks For neonatal protection <34weeks For Hemorrhage, consider major hemorrhage protocol Doses as per protocol. **UNLESS CI** or delivery imminent - D/w Obs PET drugs if required as per trust protocol Antacid prophylaxis
Radiology	Chest X-ray for line position Other investigations as clinically required	Remember lead protection Consider V/Q/ USS/ MRI if possible
Fluids/Feed	No maintenance fluids Bolus: (2 x 500ml Hartmans) if vasopressors rising **If PET Total input 85ml/hr**	Aim for neutral or -ve fluid balance Start NG feed as per ICU protocol
Electrolytes	K^+ 4.0-5.0 $mmol.L^{-1}$	Mg^{2+} > 0.8$mmol.L^{-1}$ Monitor for magnesium toxicity
Foetal monitoring	Ultrasound scan, Foetal heart rate, FBS,, liquor volume, placenta	Midwife, Obstetrician- consultant, registrar
Maternal monitoring	PET/Eclampsia - BP, Reflexes Neuro, Respiratory, Abdominal Examination. Lochia loss, PV bleeding, bonding with baby	Midwife, Obstetrician- consultant, registrar
Bowels review	If bowels not opened for 3 days	Consider docusate sodium, Senna or enema
Glucose control	Consider insulin variable rate	if blood glucose > 11 mmol.
Family and relatives	Update the family and relatives daily	Anyone with respiratory symptoms should not care for the pregnant women or the mother and newborn baby
Microbiology	Send and chase appropriate swabs and samples	Ensure appropriate antimicrobials for non-COVID infections
Invasive lines	PVC - 3-5 days with daily review A-line - consider changing after 7-days	CVC - consider changing after 7-days
Discharge planning	Liaise with obstetricians, obstetric anaesthetist on labour ward.	Account for isolation and PPE precautions required for mother, baby and staff if Covid -19 handover

In Event of Cardiac Arrest Consider Perimortem CS

Aim to deliver within 5 mins of cardiac arrest at the bedside, do not transfer patient to theatre to deliver

For CPR perform manual displacement of the uterus to the left with patient supine -Left lateral tilt reduces CPR effectiveness

Cardiac Arrest: Remember 4H's and 4T's

Consider conditions of pregnancy:	**Foetus**	**Mother**	**Placenta**
	Foetal growth/ retardation Viability Anomaly EDF	Covid 19 pneumonitis Pneumonia/Asthma Infection- chorioamnionitis Viral/ Influenza / Bacterial Sepsis PET / HELLP Haemorrhage -various causes AFE VTE	Position -? anterior Retained placenta Placenta Previa Placental abruption Abnormal-accreta, increata, Percreta

This is a guide to will help deliver intensive care for the critically ill obstetric patients. It does NOT cover all scenarios. If an Obstetric patient is deteriorating in the main building please inform the on call Consultant Obstetric Anaesthetist for advice re specific obstetric management

Please call ICU Reg /Consultant for help/advice at any time.

BHH/GHH ICM Cons mob /switch, Cons Anaesthetist Delivery Suite B2212 / Elec list B2773, Obstetric Cons Bleep 2224
Neonatal Reg B2922, Neonatal Cons Switch, GHH Cons Anaesthetist Delivery Suite Switch, Obstetric Cons Bleep

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