**Guidelines for the Management of COVID-19 in the**

**Intensive Care Unit**

Prince of Wales Hospital

Version 1.1, 18 March 2020

*These instructions are intended as a guide, particularly for junior or visiting medical staff in the ICU. They are not exhaustive, nor do they replace standard ICU care. They describe standard initial settings for all patients admitted to the ICU primarily for treatment of COVID-19. They have been agreed upon by the consultant group. Deviation from these guidelines should be discussed with intensivist on-call.*

**AIRWAY**

Intubate if:

- require FiO2 >60% (probably), FiO2 >80% (definitely)

- hypercapnia, persistent respiratory rate >30, cyanotic, haemodynamically unstable

Intubation per separate guideline

Consider using Intubation Team

**RESPIRATORY**

*Ventilation:*

Use volume-targeted pressure-regulated mode (Hamilton mode is APVsimv / SIMV+)

PEEP: Start 12cmH2O, increase to 15 if haemodynamically stable, then per FiO2 according to ARDSnet High PEEP table (below, available on Google)



FiO2 for SaO2 90-92% (unless pregnant, cardiac or cerebral ischaemia in which case 94-96%)

Target Vt for 6mL/kg (use ideal body weight, establish patient's height with tape measure)

Pplateau <30cmH2O

Respiratory rate for pH >7.20

Inspiratory time >1.3 secs (I:E 1:1.5 or closer to 1:1)

Paralysis with cistracurium infusion for 1st 24 hours, target TOF 2/4

Nursed alternating lateral position, 2 hours per side

*If P:F ratio remains <150:*

Continue or restart paralysis with cisatracurium infusion

AND Prone position for 12-16 hours per day

*If SaO2 <85% after 12 hours:*

Start iNO or prostacyclin and refer for ECMO

ECMO if SaO2 <85% after 12 hours above ventilation on FiO2 >80% or hypercapnic failure with pH <7.20

ECMO exclusion age >70, multi-organ failure, significant co-morbidities, life-limiting illness

CXR D0 and then only as clinically indicated

**CNS**

Sedation with propofol & fentanyl

Add dexmetatomidine as third line or or peri-extubation

Target RAS 0 to -1 unless problems with dysynchrony causing hypoxia (when not paralysed)

**CARDIOVASCULAR**

ICU-delivered TTE at admission and if rising vasopressors (for viral myocarditis)

Trop (predicts myocarditis) & BNP D1 & 7 (screen for cardiomyopathy)

FB neutral to negative

Noradrenaline first line vasopressor, then vasopressin when norad >0.2mcg/kg/min

Target MAP 65 (70 if significant history of hypertension – COVID is associated with AKI)

Quad lumen CVC & radial arterial line

Avoid femoral veins (for ECMO)

**GIT**

NGT at intubation

Hypocaloric feeding, i.e. 20mL/h usual NG feed, unless signs of malnutrition for 3-7 days

PPI

Coloxyl & senna 2 bd from D0, add Movicol 2 bd from D1 if BNO, then lactulose 20mL bd, then begin enemas (ileus impairs MV & ECMO)

Metoclopramide 10mg tds if gastric aspirates >500mLs

**RENAL**

Fluid balance neutral to negative

No maintenance or “TKVO” fluids

4% albumin for resuscitation

K+ >4.5, Mg >1.2 (cardiac death frequently due to arrythmia)

**HAEMATOLOGICAL**

Standard DVT prophlaxis – heparin 500u bd

Calf compressors if chemical prophylaxis contra-indicated

**INFECTION**

BC, Viral swabs, atypical screen (legionella, mycoplasma, pneumococcal), sputum/NBL

CRP daily

PCT Day 0 and as indicated

Empiric Ceftriaxone + Azithro to start with – consider ceasing if viral infection confirmed

Avoid steroids except for septic shock

**SOCIAL**

Resuscitation Plandocument on admission

Will not be for organ donation

Need list of immediate family

(Visitation plan awaited)

**ECMO**

Daily round with perfusionist

Heparin target APTT 50-90

Check for lysis & DIC: Daily LDH, Plasma free Hb, D-dimer, Fibrinogen, INR

Check TMP, flow:revs ratio

DVT USS on decannulation