QEUH Critical Care Unit: CoViD pneumonia ventilation strategy. Version 3.0 (Based on FICM CoViD guidance Aug 2021, QEUH SRF guidance, QEUH CoViD expereince/data, and Camporota ESICM Webinar April 2020)

General principles:
- While CoViD-19 pneumonia can lead to ARDS, there may be some differences in early stages of the disease
- The underpinning principle of ventilatory management is lung protective ventilation
- Data suggests ICU stay may be several weeks – **be patient**
- **Early phase (pneumonitis)**: Compliance normal, recruitment manouvres unlikely to be beneficial
- **Later phase (typical ARDS) phase**: Compliance is low and recruitment may be beneficial
- This is a prgamatic general guide - individual patients willl vary and tailoredd management will be required
- This protocol **will** continue to change as experience/data emerges

Oxygen therapy Target SpO2: 90-94%

FiO2>=0.6 and no ceiling of escalation

Assess need for intubation and mechanical ventilaion:
- Work of breathing (WoB) - high WoB risk of P-SILI
- Clinical status
- SpO2 and PaO2
- FiO2

If not requiring immediate intubation: trial of sel-proning and consider CPAP (beware ongoing high WoB: risk of P-SILI)

Targets on MV:
·SpO2: 90-94%
·PaO2>=8 kPa
·Adequate tailored CO2 clearence
·PPeak <=30

Intubation and mechanical ventilation, initial settings: lung protective ventilation eg SIMV-VC, 6ml/kg/IBW, PEEP 8cmH20, driving pressure/deltaP <=15, RR titrated initially to ETCO2 4-5kPa.

If not shocked at presentaton: Avoid excessive positive fluid balance.

Fluid strategy:
- Early phase with normal compiance: likely to need some fluid resuscitation, avoid excessively positive fluid balance, consider CO monitoring
- Late phase with poor complioance: Conventional ARDS like conservative (neutral to negative) fluid balance)

Deep sedation and NMB infusion may be needed if high spont MV or ventilator dyssynchrony

Sp02<=90% with FiO2>=0.6? or PF<=20?

Targets on MV:
·SpO2: 90-94%
·PaO2>=8 kPa
·Adequate tailored CO2 clearance
·PPeak <=30
·DeltaP <=15

Deep sedation and neuromuscular blockade. Optimise PEEP: <=10 likely ok if compliance normal. May need higher levels of PEEP if compliance reduced

Focussed Echo ASAP

Cardiovascular deterioration, consider:
·**Heart-lung-ventilator interactions eg PEEP and RV dysfunction**
·RV dysfunction
·Myocarditis
·Thrombotic episode – PTE, MI
·New bacterial infection/sepsis

Sp02 <=90% with FiO2>=0.6? or PF<=20?

Prone position

Sevre hypoxaemia refractory to prone position ventilation for >=6 hours or sooner if life threatening

Suitable for ECMO referral as per standard UK ECMO network referral criteria?

No

Review treatment plan, aims, and targets. Consider tolerating lower SpO2/PaO2 eg SpO2>=88% (or lower if 88% not acheivable), and higher PaCO2. Balance targets against patients status and avoid injurious ventilation (eg high PPeak, high DeltaP).

Yes

Refer to Aberdeen

If Aberdeenfeel appropriate but no capacity: discuss with QEUH critical care clinical management

Deterioration or failure to wean from mechanical ventiatory support
(1) Screen for treatbale complications eg VTE, co-infection, cardiac, and inflammatory complications:
- Echo
- Consider CTPA/CT Head
- Culture all sites and review lines
- Chect prococalcitonin, galactomannan and beta-d glucan
- Check ferritin, LDH, review for cytopenias (consider HLH)
- Review ventilation and minimse risk of VILI

(2) Consider discussion at daily ICU/Resp/ID MDT in cases of diagnostic or therapeutic uncertainty

Note: ICU stay for CoViD19 survivors may be prolonged. Requirement for significant ventilatory support and weaning phase may also be prolonged but can be associated with good outcome.

COVID-19
CLINICAL GUIDELINE

Note: This guideline has been fast-tracked for approval for use within NHSGGC

Covid-19 QEUH Critical Care Unit Covid pneumonia ventilation strategy

A guideline is intended to assist healthcare professionals in the choice of disease-specific treatments.

Clinical judgement should be exercised on the applicability of any guideline, influenced by individual patient characteristics. Clinicians should be mindful of the potential for harmful polypharmacy and increased susceptibility to adverse drug reactions in patients with multiple morbidities or frailty.

If, after discussion with the patient or carer, there are good reasons for not following a guideline, it is good practice to record these and communicate them to others involved in the care of the patient.

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Does this version include changes to clinical advice:	Yes
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Approval Group:	**NHSGGC Covid-19 Tactical Group (Acute)**

Important Note:

The Intranet version of this document is the only version that is maintained.
Any printed copies should therefore be viewed as 'Uncontrolled' and as such, may not necessarily contain the latest updates and amendments.