

Intensive care physicians' perceptions in the diagnosis & management of patients with acute hypoxic respiratory failure associated with COVID-19, a UK based survey

\* 1. Your Hospital Name

\* 2. What is your grade?

Other (please specify)

\* 3. Is your ICU a specialist or general unit?

Type of Unit

Specify if other specialist unit

\* 4. How many standard ICU beds you have?

How many additional COVID-19 surge bed you have?

How many hospital beds you have?

Total ICU beds

Additional COVID-19 ICU surge beds

Hospital beds

5. It has been proposed that the respiratory distress associated with COVID-19 may be due to two different phenotypes.

- **L type:** Low elastance, high compliance, sub-pleural ground glass changes on CT and low lung recruitability.

- **H type:** High elastance, low compliance, CT may show extensive infiltrates, atelectasis and oedema, more PEEP responsive.

In COVID-19 patients with severe acute hypoxic respiratory failure, are you able to differentiate between these conceptual L and H phenotypes?

- Very easy
- Easy
- Neither easy nor difficult
- Difficult
- Very difficult

6. With regards to **severe acute hypoxic respiratory failure** in COVID-19 patients (PaO<sub>2</sub>/FiO<sub>2</sub> <100mmHg), Do you use different ventilation strategies for patients with L & H phenotypes?

- Yes
- No
- Not sure

If yes, please comment on your strategy

7. What is your indication for intubation?



8. What diagnostic definitions do you use to identify patients with COVID-19 ARDS?

- American European Consensus Conference Criteria
- Lung Injury Score
- Delphi Consensus Criteria
- Berlin definition of ARDS
- All of the above
- None of the above
- Other

Other (please specify)

9. Do you use **specialist imaging** for diagnosis and management of patients with acute hypoxic respiratory failure with COVID-19?

	On admission only	On admission and frequently	On admission and infrequently	During clinical deterioration only	Never
Lung ultrasound	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
CT scan	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Transthoracic ECHO	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

10. Do you use these following **pharmacological agents** to treat COVID-19 patients with acute severe hypoxic respiratory failure (AHRF)?

	Routinely	Occasionally	Individualised according to patient	Part of a clinical trial	Never
Antibiotics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Antivirals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Corticosteroids	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Immune modulating agents other than steroids	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Neuromuscular agents	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nitric oxide	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Prostaglandins or their derivatives	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Convalescent plasma	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Full therapeutic anticoagulation in the absence of a clinical thromboembolism	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Augmented prophylactic anticoagulation in the absence of a clinical thromboembolism	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other (please specify)

11. If you have answered **yes to any use of antibiotic options in Question 10**, what are the indications (can choose more than 1 answer)?

- Specific local protocol in COVID-19
- Standard use as community acquired pneumonia
- Guided by microbiology sampling
- Guided by C-reactive protein (CRP)
- Guided by procalcitonin (PCT)
- Guided by pro-adrenomedullin (ProADM)
- Other (please specify)

12. If you have answered yes to the use of corticosteroids (Q10), what is the steroid preference, dose and duration of therapy (please choose only one type of steroid)

	Dose	Duration	Method of steroid cessation
Hydrocortisone	<input type="text"/>	<input type="text"/>	<input type="text"/>
Prednisolone	<input type="text"/>	<input type="text"/>	<input type="text"/>
Methylprednisolone	<input type="text"/>	<input type="text"/>	<input type="text"/>
Dexamethasone	<input type="text"/>	<input type="text"/>	<input type="text"/>
In steroid domain of REMAP-CAP	<input type="text"/>	<input type="text"/>	<input type="text"/>

13. With regards to corticosteroids in COVID-19 lung disease and acute hypoxic respiratory failure, when do you initiate steroids and what is the reason for the initiation outside a clinical trial?

	How long after diagnosis do you initiate?	Reason for initiation
Corticosteroids in COVID-19 lung disease	<input type="text"/>	<input type="text"/>

14. If you have answered yes to the use of neuromuscular agents (Q10), what are your indications for their use (can choose more than 1 answer)?

- Routinely early stage (<48 hours)
- Defined by a set PaO<sub>2</sub>/FiO<sub>2</sub> ratio (Depending on the severity)
- To ameliorate ventilator dyssynchrony
- During prone positioning
- Other (please specify)

15. The use of **non-invasive ventilation (NIV)/continuous positive airway pressure (CPAP) and high flow nasal oxygen (HFNO)**. Do use them in COVID-19 acute hypoxic respiratory failure?

	Routinely	Occasionally	Individualised according to patient	Part of a clinical trial	Never
Bilevel non invasive ventilation with self proning	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Continuous positive airway pressure with self proning	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bilevel non invasive ventilation without self proning	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Continuous positive airway pressure without self proning	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
High flow nasal oxygen with self proning	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
High flow nasal oxygen without self proning	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

16. What is your **fluid balance strategy** in patients COVID-19 AHRF?

	Daily fluid balance targets	Preferred resuscitation fluid	If you aim negative balance, how do you achieve it?
Aims of fluid balance	<input type="text"/>	<input type="text"/>	<input type="text"/>

Comment

17. What is your **primary ventilation** strategy in patients with COVID-19 AHRF?

- Full compliance with ARDSNet protocol
- Partial compliance with ARDSNet protocol with deviation from PEEP recommendations
- Partial compliance with ARDSNet protocol with deviation from Tidal volume recommendations
- Partial compliance with ARDSNet protocol with deviation from FiO2 recommendations
- Does not use ARDSNet protocol
- Airway pressure release ventilation (APRV)
- High frequency oscillatory ventilation

Other (please specify)

18. What is your guidance for titration of PEEP?

- ARDSNet Protocol
- Degree of hypoxia
- Lower Inflection point of the inspiratory pressure-volume curve
- Plateau pressure
- Peak airways pressure
- Oesophageal pressure
- End-expiratory transpulmonary pressure
- Recruitability as assessed by chest ultrasound
- Recruitability as assessed by CT scan
- Functional imaging (E.g.: electrical impedance tomography)

Other (please specify)

19. What are the standard ventilator settings: Tidal volume, and is it peak pressure and or plateau pressure limited?

	Tidal volume	Peak pressures limited	Plateau pressure limited
Ventilator setting	<input type="text"/>	<input type="text"/>	<input type="text"/>

20. What are your permissive levels for hypercapnia, pH and hypoxia?

	Levels of PaCO2	Levels of pH	Levels of PaO2
Permissive targets	<input type="text"/>	<input type="text"/>	<input type="text"/>

Other/comment

21. What are your rescue measures if no improvement despite maximal ventilation?

- Recruitment maneuvers
- Proning
- High Frequency Oscillatory Ventilation (HFOV)
- CO2 removal devices
- Extra-Corporeal Membrane Oxygenation (ECMO)
- Pulmonary vasodilators

Other (please specify)

22. Prone positioning. What is the indication, duration and number of cycles? Do you have dedicated prone team?

	Indication	Duration	Number of cycles	Presence of a dedicated prone team
Prone position	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

23. Do you consider tracheostomy for these patients?

Comment

24. Do you enroll your patients in COVID-19 clinical research?

	Yes	No	Not sure
REMAP-CAP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ISARIC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
GenOMICC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
RECOVERY Respiratory support	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
REALIST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Other (please specify)

25. What data management system do you have to audit patients who have had COVID-19?

- Pre-existing COVID-19 specific based data collection- electronic
- Pre-existing COVID-19 specific based data collection- manual
- Pre-existing COVID-19 data collection from research participation- electronic
- Pre-existing COVID-19 data collection from research participation- manual
- None
- Not sure

Other (please specify)

26. Do you routinely follow-up these patients after discharge from hospital?

Comment

27. Are the following rehabilitation programmes available after discharge?

	Routine	Available	No	Don't know
Physical rehabilitation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pulmonary rehabilitation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nutritional therapy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Psychological assessment and <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Neuro cognitive rehabilitation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

support

Comment