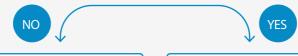


Ischaki et al. 2017.

European Respiratory Review

Acute hypoxaemic respiratory failure#

Criteria for immediate or imminent intubation are present (i.e. impaired consciousness and/or persistent shock*)



NHF initiation

- FiO₂ 100%
- Flow rate 60 L·min-1
- Temperature 37°C

Intubation and invasive MV

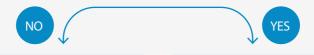
NHF for improving pre-oxygenation and peri-laryngoscopy oxygenation

- FiO₂ 100%
- Flow rate 60 L·min⁻¹

Within 1-2 h

Monitoring

Presence of one of the following: respiratory rate >35 breaths·min⁻¹, SpO₂ <88–90%, thoraco-abdominal asynchrony and/or persistent auxiliary muscle use, respiratory acidosis (PaCO₂ >45 mmHg with pH <7.35)



Titration⁺

- FiO, based on target SpO₂ (>88-90%)
- Flow rate based on <25-30 breaths·min-1 and patient comfort
- Temperature based on patient comfort.

Noninvasive MV

Short trial (1-2 h)



Monitoring

Presence of one of the following within hours (maximum 48 h), besides optimum NHF titration: respiratory rate >35 breaths min^{-1} , SpO_2 <88-90%, thoraco-abdominal asynchrony and/or persistent auxiliary muscle use, respiratory acidosis (PaCO₂ >45 mmHg with pH <7.35), haemodynamic instability[§]



Weaning from NHF

Firstly decrease FiO₂. When FiO₂ < 0.4% decrease flow rate by 5 L·min⁻¹. When flow rate <15 L·min⁻¹ stop NHF and initiate SOT

Intubation and invasive MV

NHF for improving pre-oxygenation and peri-laryngoscopy oxygenation

- FiO₂ 100%
- Flow rate 60 L·min-1

Recommended algorithm for high-flow nasal cannula use in acute hypoxaemic respiratory failure in immunocompetent or immunocompromised patients. #: arterial oxygen tension (PaO₂)/inspiratory oxygen fraction (FiO₂) <300 (patients with arterial carbon dioxide tension (PaCO₂) >45 mmHg and pH <7.35 are excluded); ¶: systolic arterial blood pressure <90 mmHg despite adequate fluid administration; +: the rationale for change in nasal high flow (NHF) settings are as follows. 1) Flow rate could be adjusted downwards by 5-10 $\text{L}\cdot\text{min}^{-1}$ per 1-2 h if none of the negative prognostic factors are present. However, if targets of arterial oxygen saturation measured by pulse oximetry (SpO2) and respiratory rate are not achieved, while the flow rate is <60 L·min⁻¹, increase of flow rate by

5-10 L·min⁻¹ is preferred to raising FiO₂; 2) increase in FiO₂ causes increases in PaO₂ and SpO₂; 3) temperature can be set at 37°C or lower (31–34°C), based on the patient's comfort; §: haemodynamic instability is defined by heart rate >140 beats·min⁻¹ or change >20% from baseline and/or systolic arterial blood pressure >180 mmHg, <90 mmHg or decrease >40 mmHg from baseline. MV: mechanical ventilation; SOT: standard oxygen treatment.

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