

INFOGRAPHIC

Seven questions in COVID-19 airway management: 5W2H



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7 QUESTIONS IN COVID-19 AIRWAY MANAGEMENT: 5W2H		How?
By the transition from L to H phenotype according to Gattinoni, COVID-19 patients should be intubated.	Why?	<p>1. Preparation of staff: protection is a priority. Putting on PPE: high-efficiency mask (FFP3 or FFP2), goggles or face mask, gloves, shoe covers, and disposable water-proof gown. All staff involved should be trained in correctly putting on and removing PPE. They will be monitored by an external member both while PUTTING ON and REMOVING the PPE to avoid unnecessary contamination.</p> <p>2. Preparation of equipment – PORTABLE KIT:</p> <ul style="list-style-type: none"> • IV drugs for RSI. • Short-onset vasoactive agents. • Endotracheal tubes of several sizes (7-7'5-8) with subglottic secretion drainage system and 10 ml syringe. • Laryngoscope with different Blades. Preferably disposable. • Portable videolaryngoscope to allow greater distance between the patient and the operator. Preferably disposable. • Aspiration system. • Bougie. • Portable oxygenation system connected to oxygen source, preferably with CPAP valve. • Antimicrobial filter. • Second-generation supraglottic device allowing for rescue intubation if necessary.
<p>EI and IMV will be initiated when the appropriate conditions of noninvasive oxygenation or support (HFNC or NIMV) are not ensured.</p> <p>1. HFNC consider EI in patients with ROX index ((SpO₂/FIO₂) / Respiratory rate) < 3, < 3.5, < 4 within 2 h, 6 h, and 12 h after initiation.</p> <p>2. NIMV consider EI in patients with HACOR index > 5 after 1 h, 12 h, or 24 h of treatment.</p>	When?	
A TWO-person team is recommended. Laryngoscopy will be performed by the most experienced member to minimize the number of attempts and the risk of transmission.	Who?	
All potentially aerosol-generating procedures in COVID-19 patients will be performed in negative-pressure rooms and/or isolated rooms . If unavailable, individual rooms with natural ventilation or climatization will be used.	Where?	
<p>1. Pre-oxygenation: Use a system that allows FIO₂ 100% oxygenation and CPAP/PEEP of at least 5–10 cmH₂O. Preferably internal circuit with highly efficient hydrophobic filters.</p> <p>2. Rapid sequence induction: Sellick maneuver is unnecessary in elective intubation. Use IV drugs allowing quick laryngoscopy, deep neuromuscular blockade, and minimum hemodynamic instability. Consider using CPAP/PEEP during apnea.</p> <p>3. Intubation:</p> <ul style="list-style-type: none"> • Two-person team, laryngoscopy performed by the most experienced member. • Direct laryngoscopy with tube and malleable stylet. • Videolaryngoscopy (recommended): disposable screen and blades to allow a greater distance between the patient and the operator. Stylet needed. • Rescue second-generation supraglottic device (after two attempts) to intubate through this device (preferably disposable flexible bronchoscope). • Cannot intubate, cannot ventilate situation: early cricothyrotomy. • If awake intubation due to known or predicted difficult airway: topic anesthesia avoiding aerosols, sedation, and flexible bronchoscope. • Capnography, auscultation of lung US (bilateral pleural sliding) to confirm correct intubation. 	What?	
		How much?
		In the consensus document of the Spanish Society of Intensive Care Medicine and Coronary Units (SEMICYUC), Spanish Society of Otorhinolaryngology and Head and Neck Surgery (SEORL-CCC), and the Spanish Society of Anesthesiology (SEDAR) recommends performing tracheostomy in COVID-19 patients from day 14 of EI and consider early tracheostomy only for stable patients with low oxygen demand, in whom prolonged mechanical ventilation is anticipated for other reasons.

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In December 2019 a new virus, a novel type of coronavirus, was reported in Wuhan, Hubei province, China, causing Severe Acute Respiratory Failure. This SARS-CoV-2 virus was described by the World Health Organization as COVID-19 for referring to the pathology it caused.¹

In August 2020, this virus is a global pandemic that affects more than 100 countries worldwide, and Spanish healthcare workers were among the most involved and infected worldwide. The numbers in our country are overwhelming: as a November 2020, over 440,000 confirmed cases, over 29,000 casualties, and over 55,000 infected healthcare professionals. Healthcare staff is more than 20% of the total of the country, being in other countries like Italy 10%, and in China or USA approximately 3-4%, according to the European Center for Disease Control and Prevention.²

Airway maneuvers have proven to be one of the phases of greatest contagion exposure for healthcare personnel (intubation, aspiration of secretions, extubation and tracheostomy). Therefore, we believe it is fundamental to standardize the care given to these patients in order to reduce mortality and to reduce the number of infected healthcare workers.³

For COVID-19 airway management, we proposed to ask 7 basic questions in airway management (see Figure), 5W2H, trying to solve this problem. Why (1), When (2), Who (3), Where (4), What (5), How (1) and How much (2).

Conflicts of interest

The authors declare no conflicts of interest.

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