

Emergency airway management in COVID-19 patients and risk to healthcare workers: A low-middle income country data from the intubate COVID registry

To the Editor,

Airway management procedures are considered high risk for viral spread and may expose healthcare workers (HCWs) to coronavirus disease (COVID-19).^[1] Tracheal intubation in these patients poses a unique set of challenges, combining complex time-critical tasks in physiologically difficult airways. Despite many publications of protocols and guidelines, there was a dearth of evidence available describing the manner in which the COVID-19 pandemic changed the practice of emergency airway management, its outcomes, and associated complications. However, what is now known is that there are variabilities in practice across different settings and countries.^[2]

In March 2020, a prospective, international, multicentre cohort study, intubateCOVID was launched to gather information about HCWs involved in tracheal intubation of suspected or confirmed COVID-19 patients, with Pakistan becoming collaborating site in May 2020 [Supplementary Material S1]. Exemption from ethical approval for formal research was given by ethics review committee (ERC) of Aga Khan University on 24th May, 2020. The other two hospitals have also provided ethical approval/waiver from their respective ERC. Participants reported details of personal protective equipment, airway management procedure characteristics, health outcomes, and personnel involved. We present data from Pakistan from this international registry and discuss their implications. We restricted the present analysis to providers who recorded an airway procedure in which they directly performed an intubation.

Twenty HCWs from three hospitals recorded at least one tracheal intubation in a patient with COVID-19, and then reported their health outcomes. Between May 2020 and March 2021, 184 tracheal intubations in COVID patients were performed, of which 86% were males. The primary indication for tracheal intubation was deteriorating respiratory condition and 78% tracheal intubations were performed by anesthesiologist, followed by emergency medicine physicians (22%). Table 1 summarizes the provider and airway procedure characteristics as frequencies.

Videolaryngoscope was used for first attempt laryngoscopy in 112 (61%) patients while direct laryngoscopy (DL) was chosen in 71 (38.5%). There was a high first attempt success

rate (89.6%). Increased number of DL using a Macintosh blade may be explained by unavailability of VL in early part of pandemic due to supply--demand disparity or its preference by some personnel. Only one patient required fiberoptic intubation who was confirmed COVID-19 positive. 141 (76.6%)

Table 1: Characteristics and details of airway management in COVID-19 by participants from Pakistan in the intubateCOVID registry from May 2020 to March 2021 (n=184)

Patient COVID status	
Confirmed	123 (66.8%)
Suspected	61 (33.1%)
Indications of intubation	
Deteriorating respiratory failure	113 (61.4%)
General anaesthetic for surgery	29 (15.7%)
Airway protection for low GCS	22 (11.9%)
Cardiac arrest	13 (7.1%)
Tube exchange	5 (2.7%)
Other indications	2 (1.1%)
Specialty of Intubator	
Anaesthesia	144 (78.3%)
Emergency Medicine	40 (21.7%)
Grade of Intubator	
Consultant/SAS/Attending	141 (76.4%)
Trainee Grades	43 (23.6%)
Staff in the intubation room	*3.1±0.6
Rapid Sequence Induction	164 (89.1%)
Device used for first attempt laryngoscopy	
Videolaryngoscope	112 (61%)
Direct laryngoscope	71 (38.5%)
Fiberoptic intubation	1 (0.5%)
Number of intubation attempts	
One	165 (89.6)
Two	14 (7.6)
Three	4 (2.1)
Five	1 (0.5)
Specialty of Intubator	
Anaesthesia	144 (78.3)
Emergency Medicine	40 (21.7)
Components of PPE Used	
Eyewear (Visor/Goggles)	150 (81.5%)
Hat	138 (75%)
Gown	173 (92.0%)
Apron	109 (59.2%)
Gloves	177 (96.2%)
Surgical Mask	110 (60.0%)
FFP2	78 (42.3%)
FFP3	68 (37.0%)
PAPR	60 (32.6%)
Plastic drape/intubation box	12 (6.5%)
Age of HCW's	*36.8±5.1
Outcome of follow-up	
Lab confirmed COVID	6 (2.8)
Self-isolated due to exposure	9 (4.2)

*Mean±SD

intubations were performed by consultants while 39 (21.2%) by trainees, consistent with suggestions in guidelines for involving most senior airway manager.^[3] Adherence to WHO personal protective equipment standards were mostly observed in our data set. Also, presence of staff in the intubation room (3.1 ± 0.6) was also found in line with different societies recommendations for minimizing the number.^[4]

The mean (SD) age of HCWs reported their follow-up data, which was 34.5 (5). Laboratory confirmed PCR was reported by six participants (2.8%) and nine (4.2%) had to isolate themselves due to high risk exposure. Sore throat, cough, and fatigue were the most observed signs and symptoms.

This represents a small sample of registry data from a low-middle income country. Although the subset may not be truly reflective of airway management practices in COVID-19 on a larger scale, it still gives insight and comparison with other settings. Pakistan is facing fourth wave currently with the emergence of the delta variant of SARS-CoV-2 and being spread across country with positivity rate rose to 9% in August 2021. The findings and recommendations by intubateCOVID registry are valuable in guiding departmental/institutional policies for airway management.

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Conflicts of interest

There are no conflicts of interest.

Supplementary information

An electronic file is provided containing names of intubateCOVID Pakistan Collaborators and the intubateCOVID International Coordinating Centre.

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Supplementary Material S1

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