



NEWSLETTER

PAKISTAN SOCIETY OF ANAESTHESIOLOGISTS KARACHI - CHAPTER

Volume: 23
Issue 01, May 2020

**Pakistan Society of Anaesthesiologists
Karachi - 2019-2020**

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EDITOR'S NOTE

Dear Colleagues

Here is PSA newsletter of April 2020. Actually this newsletter was planned to be linked with our 40th PSA Karachi annual conference but unfortunately due to COVID-19 pandemic and lockdown everything is disturbed. This issue is dedicated to COVID-19. As far as COVID-19 is concerned; things are still evolving, nothing is definite. PSA Karachi has come up with airway management guidelines in COVID-19 patients. Mainly these are prepared by Anesthesia department of AKUH which is one of the main hospitals dealing with COVID-19 patients. I hope anesthesia fraternity benefit from it. Till the time of lockdown PSA newsletter will only be available electronically. Suggestions are always welcome.

Prof. Zahid Akhtar Rao
Editor, Newsletter PSA Karachi
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PSA KARACHI NEWS

Postponement of 40th Annual Conference of PSA Karachi

On March 15, 2020 keeping in view the prevailing situation of the COVID - 19 global pandemic and complying with the government restrictions on public gatherings, the Organizing Committee has come to the consensus of postponing the 40th annual conference of PSA Karachi that was scheduled on 10th - 12th April indefinitely.

Guidelines for Airway Management of Adult COVID-19 Patients

Pakistan Society of Anaesthesiologists, Karachi Chapter has developed a guideline for Airway Management of Adult COVID-19 Patients with consensus based evidence of the senior faculty. The guidelines can be accessed online on our website and also published in this newsletter.

COVID-19 Online Series of Courses by PSA Karachi

PSA Karachi Chapter is going to organize a series of online course related to COVID -19 from first week of June 2020. First online course will be on "Airway Management in COVID-19 Patients". The details will be available on website and last page of this newsletter.



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UPCOMING CONFERENCES / MEETINGS / SYMPOSIA

Airway Management in COVID-19 Patients

Online Course of PSA Karachi
June, 2020

CAS Annual Meeting

June 19-22, 2020
Halifax

ASA Annual Meeting

October 2-7, 2020
Washington, D.C.

Euroanaesthesia

November 28-30, 2020
Barcelona

17th World Congress of Anaesthesiologists

Rescheduled to 2021
September 4-8, 2021
Prague, Czech Republic

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GUIDELINES FOR AIRWAY MANAGEMENT IN ADULT COVID-19 PATIENT

PAKISTAN SOCIETY OF ANAESTHESIOLOGISTS, KARACHI CHAPTER

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Introduction

Originated first in China in December 2019 and within three months, the World Health organization (WHO) has to declare COVID-19, the disease caused by SARS-CoV-2, a pandemic.¹ As of April 25th, 2020, 2,850,549 corona virus cases have been registered in 210 countries around the world. The overall mortality rate at this point is 20 % (198,109 deaths)². Situation in Pakistan is also gradually deteriorating; having 12,644 confirmed infected cases with death toll of 268.³

The Culprit

Severe acute respiratory syndrome-corona virus-2 (SARS-CoV-2), commonly referred as COVID-19, is a single stranded enveloped RNA virus that is notorious for its contagious nature. Since it is a new strain of coronavirus, its mode of transmission is still evolving. Droplet spread, contaminated fomites, close contacts with infected individuals are common causes of transmission. Some argue on the droplet nature of transmission, while most authorities are supporting this fact that it can be transmitted while an infected person is breathing in close proximity, of less than 1.8 meters. Possibility of transmission from faeces and blood cannot be ruled out at this moment⁴.

Clinical Spectrum

Patient with coronavirus presents with variable clinical spectrum, from mild disease without need of hospitalization (80%) to moderate disease requiring for supplemental oxygen (15%). The remaining (5%) will fall into the category of severe disease requiring aerosol-generating procedures like endotracheal intubation and mechanical ventilation⁵.

Safety Of HCPs

The highest viral load of coronavirus is found in upper airway secretions and health care providers (HCP) exposed to this viral load, without taking adequate precautions, will probably ends up with more severe illness.⁴ Thus, endotracheal intubation is the most risky aerosol generating procedure for transmitting viral load to HCPs. Other includes, are tracheostomy, non-invasive ventilation, bronchoscopy, bag mask ventilation, cardiopulmonary resuscitation, disconnection of ventilatory circuits and suctioning.⁴ Hence, procedures requiring airway management needs extreme precautions and use of personal protective equipments (PPEs) in suspected COVID-19 patients.

Strategic planning:

In order to prevent transmission amongst HCPs, we need to adopt a multidimensional strategy. Identifying infected individuals is only one domain of this contingency plan. Providing adequate training and developing protocols for HCPs in dealing high-risk procedures is another aspect. Similarly, provision of PPEs is of prime importance with regard to staff safety but imparting simulated training in donning and doffing, decontamination of surfaces and equipments, minimizing unnecessary exposure to patient and fomites, and careful waste management are other fundamentals of prime importance in our war against this highly contagious disease. Remember, infection among HCPs will eventually burden our already compromised healthcare setups and will drastically impair our efforts at a national level in this fight.

This article aims to cover only one aspect of this strategy, that is, developing a protocol for HCPs in dealing with a high-risk procedure of endotracheal intubation in COVID-19 patients during this ongoing pandemic. The recommendations are based on literature from China and UK along with author's own experiences of multiple intubations in COVID-19 patients at a major tertiary care setup.

Basic principles of Airway management in COVID-19 patients

Management of endotracheal intubation in COVID-19 confirmed or suspected cases revolves around this **RAPID** approach (**Figure I**), which is different as compared to our normal routine intubations. Since this is not a training scenario, the senior anaesthetist should consider the most reliable technique in managing airway of COVID patient. Simulated drills on this RAPID strategy will be helpful in training of HCPs dealing in airway emergencies. **Appendix A** at the end highlights the important aspects of this protocol in a checklist format.

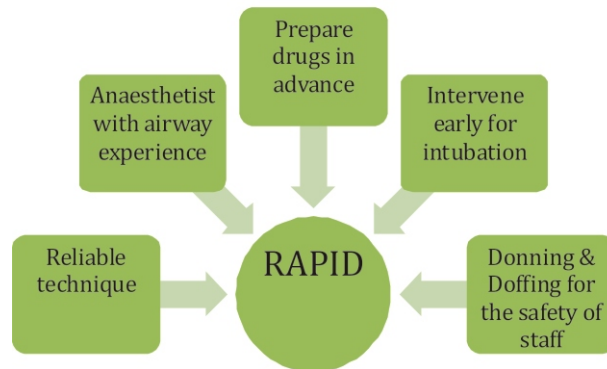


Figure I: Basic principles of Airway management in COVID-19 patients.

Pre-requisite:

Ideally, COVID-19 patients should be isolated in negative pressure rooms with a rate of one air exchange after every 4-5 minutes. Alternatively, High frequency particulate air (HEPA) filters can be used. It is better to plan ahead for endotracheal intubation rather than waiting for a crash intubation in these patients because attending rush call team required reasonable time for donning and doffing before attempting intubation. According to available resources, separate kits or carry bags should be made for intubations in COVID-19 patients (**Appendix 2**). Similarly, a team of experienced personnel should be constituted for attending all rush calls in suspected or confirmed cases. In order to familiarize with the protocol, it is recommended at an institutional level to develop online courses and simulation videos before these procedures are used in practical scenarios. Attending rush call team should consist of 4 members, one senior anaesthetist and two anaesthesia technicians. The fourth member is from the nursing staff taking care of that specific area where patient is going to be intubated. Donning and doffing should be done outside the room at a designated location for such procedures⁶. Three of the members require donning and doffing while the fourth remain outside and act as a helper /observer.

Preparation:

Necessary drugs should be prepared, marked and labeled well in advance outside the room. Make sure you are dealing with a functioning intravenous access before entering into the room. Clear plan and alternative options should be discussed in details with team members. Use simple, clear language with closed loop communications. Any anticipated difficulties and equipment needed to deal with them should be readily available outside the room. It is advisable to use disposable equipments as much as possible.⁷ After entering in the room, a quick assessment of the airway should be done using MACOCHA score;⁴ score greater than 2 requires preparation for difficult intubation (**Figure II**).

Monitoring:

Monitoring is as per American Society of Anaesthesiologist (ASA) standards. Not all centers will have in-line continuous End tidal CO₂ facility; alternatively, *ETCO₂ detector* can be used.

Induction

There are no ideal drugs for induction in COVID-19. However, strategy is to do a rapid sequence induction (RSI) with or without cricoid pressure. Adequate preoxygenation for at least 3-5 minutes using two hand technique (**Figure III**) with low flows and low pressure, is recommended.⁴ Disconnect the circuit at the site of HME filter before intubation. Most authorities prefer video laryngoscopy with disposable blade. We recommend using drugs that can attain a smooth induction and subsequent intubation without coughing or straining and with minimum hemodynamic disturbances. For this purpose co induction with Ketamine (1-2 mg/kg) and Propofol (1-2 mg/kg), Succinylcholine (1.5 mg/kg) for paralysis, and Lidocaine (1-1.5 mg/kg) for blunting airway reflexes is logical. Take extreme care when removing bougie or stylet as not to contaminate surfaces with airway secretions.

| | | |
|---------------------------------|---------------------------------------|---|
| M A C O C H A | Malampatti III or IV ----- | 5 |
| | Obstructive sleep apnoea----- | 2 |
| | Cervical spine movement limited ----- | 1 |
| | Mouth opening <3 cm ----- | 1 |
| | Coma ----- | 1 |
| | Hypoxemia (<80%)----- | 1 |
| | Non-Anaesthetist intubator ----- | 1 |



Figure II: MACOCHA score for prediction of difficult airway.

Figure III: Hand position for decreasing aerosol generation during preoxygenation and bag mask ventilation

Figure IV: Placement of filter at patient's end.

Start ventilation only after inflating the ETT cuff. Make sure the cuff pressure is at least 20-30 cmH₂O or 5 cmH₂O above peak inspiratory pressure for avoiding leaks.⁴ Auscultation for confirmation of endotracheal tube placement is difficult with airborne precautions and it is not recommended.⁸ Availability of vasopressor filled syringes is desirable for counteracting post intubation hypotension. Use Mapleson C circuit system and place a viral or HME filter proximal to the patient end (**Figure IV**). Avoid disconnections, if needed for instance during tracheal aspirate, clamp the tube first before any disconnection.

Resource constraint setups

Having negative pressure rooms or installing HEPA filters in resource limited setup is not always possible. Finances and expertise are limiting factors in building such rooms for doing aerosol generating procedures in COVID-19 patients. We suggest using intubation box (**Figure V & VI**) or transparent plastic sheet (**Figure VII**) as alternatives for doing intubations in confirmed or suspected cases.

Limitations

The information provided in this article is based on available literature. Since this disease is evolving with each passing day and new information coming from all corners of the world, we cannot claim that this document is complete and up to date about COVID-19. This document does not aim to promote or recommend any device or apparatus. It is also beyond scope of this document to discuss procedure of donning and doffing, timing of intubation as well as the treatment strategy for COVID-19 disease.

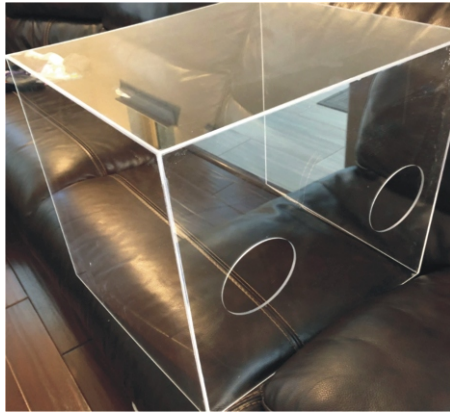


Figure V: Intubation Box

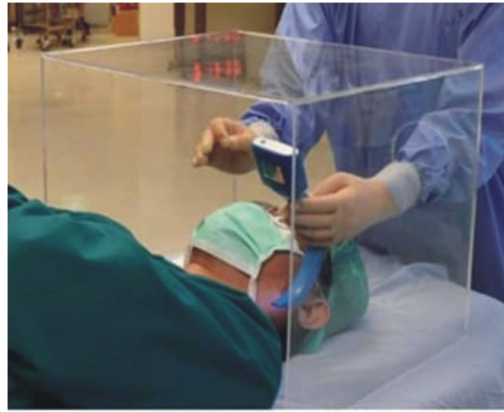


Figure VI: Technique for using intubation box during video laryngoscopy.



Figure VII: Video laryngoscopy under plastic sheet cover.

Appendix 1

Adult Airway Management In COVID-19 Patients. (Quick reference guide)

| Preparation | Donning & Doffing | Induction |
|---|--|--|
| <ol style="list-style-type: none"> 1. Negative pressure room for all aerosol generating procedures. Alternatively, intubation box or plastic drapes should be an option. 2. Plan well ahead about all possible intubations. 3. Experienced anaesthetist needed for intubation. 4. Avoid taking keys, pager, badges and phones in patient's room. 5. Prepared a COVID-19 intubation pack. 6. Donning and doffing at allocated area. 7. Minimize team members to FOUR (one anaesthetist, two tech and one nurse). One staff remains outside the room & will assist in case. 8. Prepare and label drugs outside the room. Hand them to the nurse with clear and simple instructions. 9. Prepare appropriate size ETT with stylet or bougie. 10. Follow clear, simple instructions and close loop communication through out. 11. Disposable video laryngoscope and equipment. 12. Syringe for cuff inflation. | <ol style="list-style-type: none"> 1. Don't rush without proper PPEs. 2. Allocated area for D&D. 3. Disposable head cover. 4. PAPR is safest; N95 with screen shield is minimum. 5. Disposable gown. 6. Double gloves technique. 7. Shoe cover. 8. At doffing, first remove disposable gown and upper pair of gloves. 9. After removing PPE wash your hands with soap before touching anything. 10. Collect all reusable in a separate plastic bag for decontamination. 11. Take a bath if possible after every intubation. | <ol style="list-style-type: none"> 1. Monitoring as per ASA standards. 2. Ketamin (1-2 mg/kg) and Propofol (1-2mg/kg) for co-induction. 3. Succinylcholine (1.5mg/kg) for muscle relaxant. 4. Lidocaine (1.5mg/kg) for blunting intubation reflexes. 5. Pre-oxygenate using Mapleson C circuit with Viral or HME filter. 6. RSI without bag mask ventilation. 7. Avoid auscultation, use ETCO2 detector for confirmation. 8. Avoid circuit disconnections and if needed clamp the tube before disconnection. 9. Post procedure necessary documentation outside the room. 10. Handover to the primary team. |



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Appendix 2

Intubation Box/Kit

Appropriate sizes of ETT (size 7 & 8)

Airway adjuvants tooth guards, oropharyngeal airways, bougie, stylet, clamp.

Second generation supra glottic airway devices.

Lubrication and Tube fixation band and tube clamp.

Syringe for cuff inflation.

Mapleson C circuit with HMEF

Video laryngoscope with disposable blade or McGrath video laryngoscope.

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BASIC COVID-19 COURSE BLENDED LEARNING

BASIC is a short course, usually held over 2 days and covers essential and fundamental aspects of Intensive Care. First BASIC Instructor/Provider Course was held in Pakistan at the Aga Khan University in 2013, and since then 5 instructor courses have been held across Pakistan training more than 50 BASIC Course instructors and around 500 doctors from Karachi, Lahore, Islamabad and Peshawar have done the Provider Course.

In view of the COVID-19 pandemic and the anticipated large number of patients requiring mechanical ventilation and ICU care in Pakistan, the need to rapidly identify and train frontline workforce to provide standardized care to critically ill patients became very urgent. The Health Services Academy, a Degree Awarding Institute as chartered under Health Services Academy (Restructuring) ACT 2018, under the umbrella of Ministry of National Health Services Regulations & Coordination, Government of Pakistan adopted the blended learning version of the BASIC Course to train doctors/nurses to rapidly identify, stabilize and initiate life support, including mechanical ventilation in critically ill patients while using PPEs most efficiently.

Prof. Madiha Hashmi
Regional Coordinator

BASIC COVID-19 BLENDED LEARNING COURSE IN DIFFERENT INSTITUTES OF KARACHI.



Abbasi Shaheed Hospital, Karachi.



Basic Training Session COVID-19 (FRPMC)

Fazaia Ruth Pfau Medical College.



Ziauddin Hospital, Clifton.



Basic Training Session COVID-19 (FRPMC)

Fazaia Ruth Pfau Medical College.



Ziauddin Hospital, Clifton.



The Indus Hospital



Dar-ul-Sehat Hospital



The Indus Hospital



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COVID-19 PANDEMIC - RESHAPING HEALTHCARE SYSTEM

The super power looks helpless and the top ranking health care systems of Europe seem feeble. I never thought that a simple surgical mask would become a splendid sign among the health care workers in the West. Under these circumstances one can imagine the mental state of agony in doctors from a third world country.

It is a reality that Pakistan's health care system cannot think of bearing such load, the US and Europe are currently passing through. There are only two possible weapons for us to fight the deadly COVID-19, social distancing, whether it requires complete lockdown and mass testing.

We are at the edge of a disaster, the number of local spread is rising day by day and now we have crossed the figure of fifty thousand, it is a high time for the nation to wake up and maintain social distancing. I would better call it a final call.

The health care professionals around the globe are the frontline soldiers against COVID-19. They are fighting a war with an invisible enemy. It is a matter of concern that health care workers are also losing their lives in every country due to lack of protective gear while dealing with known positive cases. On the other hand, eighty percent of the cases are either asymptomatic or have mild symptoms, which disappear without any specific treatment. The deadly enemy not only presents in symptomatic patients but hides in that eighty percent of the asymptomatic cases and waits for a minor negligence to invade the contact.

The Federal and Provincial governments has issued several advisories to all public and private sector hospitals to take appropriate measures to contain the spread of corona virus. Initially all elective surgeries and OPDs were closed. Now under the slogan of "Learn to live with the coronavirus" elective surgeries and OPDs are re-starting.

Anaesthesiologists, Surgeons and Paramedical staff working in ORs are at high risk. You being a health care worker, doesn't guarantee you protection. Remember mouth, nose and eyes cover them with proper gear before it's too late and don't forget hand washing and social distancing.

When a health care worker enters a COVID-19 dedicated unit, he knows where is he heading and how to protect himself. He does proper donning and doffing of personal protective equipments (PPEs). But what about the health care workers who are not dealing with the diagnosed COVID-19 patients? Now is the time to consider every patient positive until proven otherwise. For the safety of all the health care workers in the country the government should provide PPEs to all as well as provide proper treatment and compensation to the HCWs affected with COVID-19.

The Corona Virus is not going to leave us anytime soon. We have to take precautions not only for our safety but for everyone around us as a responsible Anaesthesiologists.

Year 2020 is unique in a way that the sorrows and worries of every single person around the globe are same. I hope and pray, the same year would be a year of joy and happiness for all of us, as victorious of a pandemic.

Dr. M. Kashif Iqbal
Gen. Secretary,
Pakistan Society of Anaesthesiologists, Karachi



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AIRWAY MANAGEMENT IN COVID-19 PATIENTS

Self Placed Free Online Course to be held, in June 2020

Organized by

PAKISTAN SOCIETY OF ANAESTHESIOLOGISTS, KARACHI CHAPTER

Objectives

At the end of the course participants would be able to learn:

- Basics pathophysiology related to COVID 19.
- Infection control measure.
- Donning and Doffing.
- Airway assessment.
- Pharmacology.
- Intubation strategic planning.
- Securing of airway and hands off.
- Safe Extubation.

Teaching Strategy

- Pre-course and Post course MCQs
- Presentations
- Simulation video
- Recent updates

Target Audience

- Anaesthesiologists
- ER Physicians
- Intensivists
- Health Care Providers involved in the Airway Management of COVID 19 Patients

Course Director: Dr. Faraz Shafiq

Co-Director: Dr. M. Irfan ul Haq

Coordinator: M. Kashif Iqbal

Course Faculty:

Dr. Saeeda Haider

Dr. Muhammad Hamid

Dr. Amin Khawaja

Dr. Zahid Rao

Dr. Muhammad Irfan Ul Haq

Dr. Dileep Kumar

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