

Operating Room and Personnel During COVID-19 Pandemic in Case, When Clinic is Not Yet on Front-Line

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ABSTRACT

Since the beginning of 2020 new COVID-19 dramatically changed all aspects of life worldwide. Although we have no specific treatment of this disease, importance of preventive measures are invaluable. Prevention of pandemic spread is especially important in hospital settings, but if COVID-19 clinics are routinely treating infected patients with keeping all prescribed preventive rules, clinics which are not yet treating these patients are in continuous alert of COVID-19 accident. Therefore preventive measures for clinics, which are not yet in front-line, are specific and there is a need in distance work, adequate number of diagnostic tests and protective equipment. Important preventive measure is the creation of interchangeable health care teams.

Keywords: COVID-19; Operating room; Health care personnel; Prevention

INTRODUCTION

During the last four months world is living in new reality, which is related to COVID-19, which has affected about 3.5 people worldwide. Although the many biologic and medical aspects of new SARS Cov-2 virus still are not known, methods of the new infectious disease treatment are not clearly defined. In this situation most effective is the prevention of the disease. Common measures of prevention are based on world healthcare organization (WHO) recommendations but they are specific for medical personnel which is treating of COVID-19 patients [1]. In some areas with wide spread of COVID-19 is shortage of hospital beds, medical personnel, medications and equipment. Opposite of this, in areas with minor spread of disease, for example in Georgia, there are number of hospitals which are not yet involved in treatment of this infection. On the same time those who are not treating of these patients are in more dangerous position, because there is a possibility of accidental infection from undiagnosed "non-COVID-19" patients. In this article we will discuss the tactic of these hospitals for keeping of operating room personnel during COVID-19 pandemic.

REVIEW

During COVID-19 pandemic is not known the true number of infected patients, because in many cases disease is asymptomatic and most of people are not yet tested [2]. It means that theoretically each patient who is going to the hospital can be infected with SARS Cov-2. In this situation it is not surprising, that colleagues from Stanford University hospital propagating the protocol postulating, that each patient which is going for elective or emergency surgery and is not tested previously, is infected with SARS Cov-2 and also other clinics are recommending to work according to this postulate too [3,4]. This approach gives as the maximal possibility for minimizing of infection spread but changes the all existing rules of hospital settings. Particularly, there is a need in designated COVID operating areas (COA) which must be ready for possible urgent/emergency COVID-19 cases and transport of patients to this area must be maximally short for avoiding all unnecessary contacts. Personnel, who is contacting with patient during transportation or in the operating room (OR) must use full in personal protective equipment (PPE) including gown, gloves, eye protection and N-95 mask. Number of these personnel as well as their working time must be as less, as possible, for minimizing the contact with patient and infection spread. If intubation is

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Received: May 07, 2020; **Accepted:** May 18, 2020; **Published:** May 25, 2020

Citation: Shoshiashvili V, Davitashvili D, Kachibaia N, Ratiani L, Machavariani K (2020) Operating Room and Personnel During COVID-19 Pandemic in Case, When Clinic is Not Yet on Front-Line. J Anesth Clin Res.11:951. DOI: 10.35248/2155-6148.20.11.951.

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needed, preferable is to provide rapid sequence intubation for avoiding of mask ventilation and aerosolization. Also, during laryngoscopy and intubation anesthesia staff must be equipped with FFP3 filters, awake and fiberoptic intubations must be avoided if possible [5]. High-efficiency particulate air (HEPA) filter must be used in breathing circuit (at the connection with patient, between expiratory limb and anesthesia machine circuit and for the protection of gas sampling tube) [3,6]. HEPA filters and soda lime must be changed after the case. OR air exchange must increase until >25 exchange/h. Patient must extubated and fully recovered in the OR, transported to the ward and must spend there as little time, as possible, to minimize the contact with surrounding environment. After the ending of case, all areas, electric or other devices at risk of contamination must be cleaned and disinfected and OR must stay free as long as possible for air cleaning. Specific rules are for PPE undressing/removal, environmental sanitization, waste disposal and linen management, which are established in COVID-19 clinics and described in literature [3].

Necessity to keep of these rules absent in case, when is the possibility to delay urgent/emergency procedures until SARS Cov-2 test results will available. Testing of all patients who are undergoing for elective/non-elective diagnostic or surgical procedures will allow keeping both health care personnel and patient contamination. Theoretically rules described above are ideal for prevention of OR and other health care personnel contaminating but for its practical release, is needing the availability of sufficient number of SARS Cov-2 laboratory tests, protective equipment for the personnel and adequate training of these personnel. Unfortunately, all of this is not always and everywhere available and we need in other ways too for personnel contamination prophylaxis.

For this reason it is interesting the other protocol from North Carolina, according to which the infection response plan is divided on three levels. First of them is alert, when in OR is not yet the confirmed case of COVID-19. Level 2-first case of COVID-19 has been confirmed and possible reduction of hospital beds and staff due to illness. Level 1-facility is working in 100% or more of capacity [7].

Authors are recommended, that at the alert level, should be minimized clinical visits, maximal work at home if there is no need in direct clinical care. For this purposes it is reasonable to create two interchangeable teams from hospital personnel including doctors and nurses. On the basis of our current knowledge, that estimated SARS Cov-2 incubation period is two weeks [8], each of these team will work during two weeks with rest and isolation during next two weeks. It gives the possibility to rational use of human resources not only in clinics in which are not yet COVID-19 cases but in COVID-19 clinics too in which the use of full PPE is necessary. Currently some clinics in Georgia are working on this alert level with minimal clinic visits of personnel.

At the level two cases which are not sensitive should be eliminated and surgical staff must work in ICU and trauma departments, noncritical patients must be discharged

aggressively. Preventive measures which are established for COVID-19 patients must be maintained for all steps of surgical treatment [9]. When infected patient is discharged from clinic the work can be returned to alert level again. In case, if SARS Cov-2 testing of each urgent/elective patient is available, this approach is completely safe and rationale for working in OR as well as for whole hospital staff. IF level 1 is reached, elective surgery must be cancelled and critical care specialists should manage COVID-19 patients in ICU department. In this case, the clinic, which previously was not on front-line, will continue work as COVID-19 clinic until the end of pandemic.

CONCLUSION

In conclusion, there is an evidence, that healthcare personnel had been infected and died especially at the initial stage of COVID-19 pandemic spread and there are accidents of in hospital patient infection too [2,10]. Therefore to keep of the preventive measures are absolutely necessary for all clinics in over the world, especially currently, when we have no specific treatment of COVID-19. Distance working and working with two interchangeable teams gives additional possibilities for the rational use of health care resources during COVID-19 spread. Especially it is important for clinics, which are not yet on front-line. Also, it is helpful for established COVID-19 clinics too.

REFERENCES

1. World Health Organization. Novel Coronavirus (2019-nCoV) technical guidance. <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance>.
2. Kaplan J, Frias L, Mcfall-Johnsen M. A third of the global population is on coronavirus lockdown - here's our constantly updated list of countries and restrictions. Business Insider Australia. 2020.
3. Coccolini F, Perrone G, Chiarugi M, Di Marzo F, Ansaloni L, Scandroglio I, et al. Surgery in COVID-19 patients: operational directives. *World J Emerg Surg.* 2020;15(1):25.
4. Forrester JD, Nassar AK, Maggio PM, Hawn MT. Precautions for Operating Room Team Members During the COVID-19 Pandemic. *J Am Coll Surg.* 2020; S1072-7515(20):30303.
5. Peng PWH, Ho PL, Hota SS. Outbreak of a new coronavirus: what anaesthetists should know. *Br J Anaesth.* 2020; 124(5):497-501.
6. Wong J, Goh QY, Tan Z, Lie SA, Tay YC, Ng SY, et al. Preparing for a COVID-19 pandemic: a review of operating room outbreak response measures in a large tertiary hospital in Singapore. *Can J Anaesth.* 2020; 67(6):732-745.
7. Ross SW, Lauer CW, Miles WS, Green JM, Christmas AB, May AK, et al. Maximizing the Calm before the Storm: Tiered Surgical Response Plan for Novel Coronavirus (COVID-19). *J Am Coll Surg.* Epub ahead of print.
8. Lauer SA, Grantz KH, Bi Q, Jones FK, Zheng Q, Meredith HR, et al. The Incubation Period of Coronavirus Disease 2019 (COVID-19) From Publicly Reported Confirmed Cases: Estimation and Application. *Ann Intern Med.* 2020;172(9): 577-582.
9. Swift D. NIH Panel Issues Guidelines for COVID-19 Treatment. *Medscape Medical News.* 2020.
10. Palmore TN. Coronavirus disease 2019 (COVID-19): Infection control in health care and home settings. 2020.