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Original Review Article

Medico legal Management of COVID 19 Pandemic- Challenges and Solutions

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Abstract

In the existing scenario of management of the ongoing pandemic of COVID -19 there are various pitfalls and challenges that the doctors are currently facing. To name a few we have continuously changing treatment protocols, lack of trained staff, interrupted supply of personal protective gears, many legal and ethical issues. In addition to the primary responsibility as doctors we are catering to the secondary needs of hospital administrative services like data monitoring & digitization, quarantine, logistics, cleanliness, security concerns, dead body management and many more. The forensic medicine experts are primarily concerned with the handling of dead bodies and with conducting post mortem examination of brought dead cases with lack of history or any relevant records which could aid in decision making to avoid conducting a post mortem examination. Hassel faced by the forensic experts in the department varied from managing relatives concern while disposing dead body to various functional issues like crematorium readiness, sanitization of vehicle, body bags availability, availability of body packers, coordination among doctors, staff and relatives, issue of transport of body and interference by bureaucrats and community leaders were some of the challenges mentioned here.

1. Introduction

Pandemics clearly expose the strength and weaknesses of the healthcare systems in different countries, as well as the obstacles and inequities of access to healthcare.¹ Handling a dead body with a Covid tag would run chills down the spine of anyone who would be in front line to handle such cases. Every forensic medicine expert have been facing issues related to conducting post mortem examination on brought dead cases and has also been exposed to the virus in doing the same.

Changing treatment protocols and handling medical and administrative issues ensuring all relevant ethical norms and keeping in mind various laws along with ensuring control of spread of disease has been challenging to all. It's a tedious work to keep our self updated with all the guidelines issued by the government. Psycho-social support should be adapted to needs, culture, and context and should consider local coping mechanism,² this article attempts to have a consoli-

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dated document containing the relevant information. The entire article focuses on aspects of the management of various responsibilities dealt with at the Government Medical College, Khandwa.

2. Ethical Concerns:

In a pandemic scenario where we need to cater to the health needs of a large number of populations with limited experts to handle the situation and the risk involved in treating them gives rise to many ethical and legal issues which are difficult to address. The doctors from various branches of medicine and even doctors who are not trained in the allopathic system of medicine have been deployed as frontline Corona warriors to address the health needs of the population. Medical professionals have been serving in the hour of need to fight against the deadly virus, in spite of having a potential risk of carrying the infection home has been one major concern.

The doctors have been following guidelines issued by the government in terms of treatment protocols which even lack scientific validity and are mere assumptions to combat the virus. The impact of the nationwide lock down on the mental status of the medical professionals and the general public at large gave rise to many human right issues pertaining to the right to health and safety.

3. Measures by the Government:

The Central and state government have rightfully addressed many ethical and legal issues that rose in the pandemic, from supply of food and basic amenities to the medical needs by creating various COVID-19 hospitals and COVID-19 care centers. Government has announced Insurance coverage of 50 lakhs for Health Care Workers working for Corona Pandemic³ the issue faced is the difficulty related to addressing the claims for the same.

Law: Government has invoked various Acts to strategically face the Pandemic dilemmas:

1. National Disaster Management Act 2005 (Restriction of movement)
2. Epidemic Disease Act 1897 (Prevention & Containment)
3. Article 355 and entry 29 of concurrent list of constitution of India. (Lockdown)
4. Essential Commodities Act (ECA) 1955 (e.g., Provision of Masks & other commodities)

5. Essential Services Maintenance Act (ESMA) 1981 (Essential services to be regulated).
6. Sec 144 (Restriction of Assembly of 4 or more)
7. 174 & 176 (Death & Autopsy related Provisions).

4. Current Testing Strategy for Covid-19:

1. All asymptomatic individuals who have undertaken international travel in the last 14 days:
 - They should stay home quarantined for 14 days.
 - They should be tested only if they become symptomatic (fever, cough, difficulty in breathing)
2. All family members living with a confirmed case should be home quarantined.
3. All symptomatic contacts of laboratory confirmed cases.
4. All symptomatic health care workers.
5. All hospitalized patients with severe acute respiratory illness (fever and cough and/or shortness of breath).
6. Asymptomatic direct and high-risk contacts of a confirmed case should be tested once between day 5 and day 14 of coming in his/her contact.

5. Dead body management:

The department faculty was given the responsibility to handle the dead body handling and disposal task for all COVID-19 positive and suspected deceased at the District hospital attached to the medical college. To ensure health and safety of all the department developed a SOP for careful handling and proper disposal of bodies. The basis of which was laid upon the Central government issued Standard Precautions to Be Followed by Health Care Workers While Handling Dead Bodies of COVID-19: Guidelines as Per Directorate General of Health Services (EMR Division), Ministry of Health & Family Welfare, Government of India.

Those cases which were brought dead to hospital without COVID-19 testing report following **history** was sought.

1. History of travel to any other country or area in last 15 days where COVID-19 has been reported.
2. History of contacts with suspected or confirmed cases of Covid-19
3. History of home quarantine for flu symptoms.

4. History of travel and symptoms as per case definition of Covid-19.
5. History of being tested for Covid -19 as per protocol at authorized laboratory.
6. Professional history – healthcare worker, laboratory worker, chemist.

Standard Infection Prevention Control Practices should be followed at all times. It Includes-

1. Proper hand hygiene.
2. Use of personal protective equipment (PPE)
3. Safe handling of sharps.
4. Disinfect instruments and devices used on the patient.
5. Disinfect linen and clean and disinfect environmental surfaces.
6. Staff handling dead bodies in the isolation area, mortuary, ambulance and crematorium / burial ground should be trained in the infection prevention control practices.

PPE recommendations:

- Wear sterile, nitrile gloves when handling potentially infectious materials.
- If there is a risk of cuts, puncture wounds, or other injuries that break the skin, wear heavy-duty gloves over the nitrile gloves.
- Wear a clean, long-sleeved fluid-resistant or impermeable gown to protect skin and clothing.
- Use a plastic face shield or a face mask and goggles to protect the face, eyes, nose, and mouth from splashes of potentially infectious bodily fluids.

Precautions to Be Taken While Transferring Body from The Isolation Area to The Mortuary:

- The health worker handling dead body should perform hand hygiene; ensure proper use of PPE.
- All tubes, drains and catheters on the dead body should be removed and disposed in triple layered yellow plastic bags for incineration.
- Any puncture holes or wounds (resulting from removal of catheter, drains, tubes, or otherwise) should be disinfected with 1% hypochlorite and dressed with impermeable material.
- Apply caution while handling sharps such as intravenous catheters and other sharp devices. They should be disposed into a sharp's container.
- Plug oral, nasal orifices of the dead body to

prevent leakage of body fluids.

- All used/ soiled linen should be handled with standard precautions, put in bio-hazard bag and the outer surface of the bag disinfected with hypochlorite solution.
- Used equipment should be autoclaved or decontaminated with disinfectant solutions in accordance with established infection prevention control practices.
- Place the dead body in leak-proof plastic body bag. The exterior of the body bag can be decontaminated with 1%hypochlorite.
- The body bag can be wrapped with a sheet
- The body will be either handed over to the relatives or taken to mortuary.
- If the family of the patient wishes to view the body at the time of removal from the isolation room or area, they may be allowed to do so with the application of Standard Precautions.
- Provide counseling to the family members and respect their sentiments.
- All medical waste must be handled and disposed of in accordance with Bio-medical waste management rules.
- The health staff who handled the body will remove personal protective equipment and will perform hand hygiene.
- All surfaces of the isolation area (floors, bed, railings, side tables, IV stand, etc.) should be wiped with 1% Sodium Hypochlorite solution; allow a contact time of 30 minutes, and then allowed to air dry.

Precautions to Be Taken While Handling of Dead Body in mortuary:

The main driver of transmission of COVID-19 is through droplets. There is unlikely to be an increased risk of COVID infection from a dead body to health workers or family members who follow standard precautions while handling body.⁴

- Ear mark a few boxes for bodies of Covid-19.
- Keep VTM (Viral transfer media) for transferring swabs collected from suspected cases.
- Mortuary staff handling COVID dead body should observe standard precautions.
- Dead bodies should be stored in ear marked cold chambers maintained at approximately 4°C.
- The mortuary must be kept clean.
- Environmental surfaces, instruments and transport trolleys should be properly disinfected

with 1% Hypochlorite solution.

- After removing the body, the chamber door, handles and floor should be cleaned with sodium hypochlorite 1% solution.
- While handing over the body to relatives only next of kin (with PPE) should be shown the body from a distance of 01 meter and only designated mortuary staff should handle the body after following all standard precautions.
- Embalming of dead body should not be allowed.

Precautions to Be Taken While Transportation:

- The body, secured in a body bag, exterior of which is decontaminated poses no additional risk to the staff transporting the dead body.
- The personnel handling the body may follow standard precautions
- The vehicle, after the transfer of the body to cremation/ burial staff, will be decontaminated with 1% Sodium Hypochlorite.

Precautions to Be Taken at The Crematorium/ Burial Ground:

The Crematorium/ burial Ground staff should be:

- Sensitized by public health department that COVID-19 does not pose additional risk.
- The staff to practice standard precautions of hand hygiene, use of masks and gloves.
- When the body is handed over to the police and relatives after autopsy, then they must be advised not to open the bags or touch the body and not to gather together to minimize spreading infection.⁵
- Religious rituals such as reading from religious scripts, sprinkling holy water and any other last rites that does not require touching of the body can be allowed.
- Bathing, kissing, hugging, etc. of the dead body should not be allowed.
- The funeral/ burial staff and family members should perform hand hygiene after cremation/ burial.
- The ash does not pose any risk and can be collected to perform the last rites.
- Large gathering at the crematorium/ burial ground should be avoided as a social distancing measure as it is possible that close family contacts may be symptomatic and/ or are shedding the virus.

- Boards displaying above information should be displayed at prominent places in the crematorium/burial ground.
- Proper provisions for hand washing and sanitizer must be made available for relatives before leaving the crematorium.

Precautions to Be Taken While Performing Autopsies on Covid-19 Dead Bodies

The death in hospital or under medical care due to COVID-19 is not a medico legal case and no Forensic Autopsy will be conducted. The certification of death and issuance of Medical Certificate of Cause of Death (MCCD) will be done by the treating doctor of the hospital.⁶

If autopsy is to be performed for special reasons like suicide, homicide, accident, custodial deaths, allegations of negligence in treatment.

The following infection prevention control practices should be adopted:

- The Team should be well trained in infection prevention control practices.
- The number of forensic experts and support staff in the autopsy room should be limited preferably one doctor (Forensic Medicine/Pathologist) and one support staff to ensure judicious use of human resource.
- The team of doctors who would be involved in autopsies should be trained in collection of nasopharyngeal (preferable) and oropharyngeal swab and/ or swabs from bronchial tree & also blood for culture.
- The chief of mortuary services should make provisions for adequate number of: PPEs, Instrument sets, Culture bottles, VTM with swabs, Plastic body bags & Linen, 1% sodium hypochlorite.
- Human resource - to prepare duty list so that staff is used sparingly and with adequate rest so that they are available when ever required.
- The Team should proper PPE (coveralls, head cover, shoe cover, N-95 mask, goggles / face shield).
- Round ended scissors should be used.
- PM40 or any other heavy-duty blades with blunted points to be used to reduce prick injuries.
- Only one body cavity at a time should be dissected.

- Unfixed organs must be held firm on the table and sliced with a sponge – care should be taken to protect the hand.
- Negative pressure to be maintained in the mortuary.
- An oscillator saw with suction extraction of the bone aerosol into a removable chamber should be used for sawing skull, otherwise a hand saw with a chain- mail glove may be used.
- Needles should not be re-sheathed after fluid sampling – needles and syringes should be placed in a sharps bucket.
- Reduce aerosol generation during autopsy using appropriate techniques especially while handling lung tissue.
- Avoid spillage of body fluid during autopsy. In case of spillage wash immediately and clean with 01% sodium hypochlorite/disinfectant.
- Instruments should be kept in 1% sodium hypochlorite.
- After the procedure, body should be disinfected with 1% Sodium Hypochlorite and placed in a body bag, the exterior of which will again be decontaminated with 1% Sodium Hypochlorite solution.
- The body thereafter can be handed over to the relatives.
- Autopsy table to be disinfected as per standard protocol.

Postmortem Specimens from Deceased Persons Suspected for COVID-19:

If an autopsy is performed, collection of the following postmortem specimens is recommended:

1. Upper respiratory tract swabs: Nasopharyngeal Swab AND Oropharyngeal Swab (NP swab and OP swab).
2. Lower respiratory tract swab: Lung swab from each lung, Separate clinical specimens for testing of other respiratory pathogens and other postmortem testing as indicated.
3. Formalin-fixed autopsy tissues from lung, upper airway, and other major organs.

If an autopsy is NOT performed, collection of the following postmortem specimens is recommended:

1. Upper respiratory tract swabs: Nasopharyngeal Swab AND Oropharyngeal Swab (NP swab and OP swab).
2. Separate NP swab and OP swab specimens for testing of other respiratory pathogens.

- If the swab comes positive for corona virus the MCCD should be filled.
- If the swab comes negative for corona virus, the autopsy should be conducted as per protocol taking proper precautions.
- If swab is taken, then the relatives should be counseled and informed to wait till the receipt of the report.⁷

6. Autopsy concern

Various studies done on post mortem specimens have revealed results bringing forward the various pathological changes that are caused by the corona virus. Lisa M Barton et al stated that autopsy revealed diffuse alveolar damage and chronic inflammation and edema in the bronchial mucosa.⁸ of a COVID confirmed case. Hanny Al-Samkari et al stated that patients with coronavirus disease 2019 (COVID-19) have elevated D-dimer levels. Early reports describe high venous thromboembolism (VTE) and disseminated intravascular coagulation (DIC) rates, but data are limited.⁹ Hence, collecting of histopathological samples to figure out the pathological changes that occur in COVID-19 is the need of the hour to fight the virus.

Challenges:

1. Addressing issues that delay the handing over the body of the deceased is essential due to delay in procedural issues like Crematorium readiness, Sanitization of vehicle, Body Bags availability etc.
2. Procurement of PPE, Drugs, and Sanitizers etc was a big challenge tackled well by the government
3. Biomedical Waste Management was tedious task that required daily checks.
4. Updating all the concerned with regularly changing government guidelines required regular teaching sessions.
5. Catering to the needs of asymptomatic patients in CCC was mammoth task as entertaining them in hospital was new concept, never done before in India.
6. Data reporting to Government officials was tremendous and on the toes task which required computer awareness.
7. Working in PPE kit for Doctors, Nurses, Ward boys, housekeeping, Guards changed for people working with PPE kits was exhaustive.

Recommendations:

1. All deaths during Pandemic should be cremated, if buried ensure its far from residential area: 400 meters away from drinking water, 1 meter separated from each other and depth of more than 3 meter in area demarcated.
2. In confirmed cases, no autopsy should be done and death should be certified immediately.
3. MLC registration should be done judiciously in cases like-Death within 24 hours of admission.
4. In such cases, cause of death can be given depending on clinical and laboratory findings.
5. COVID-19 suspected cases brought dead to the hospital should have a provision of testing followed by verbal autopsy and provision to issue a death certificate without performing the complete autopsy.
6. If autopsy surgeon proposes the need of Nasopharyngeal / oro-pharyngeal swab it should be done by ENT specialist.
7. Autopsy should be preferably performed by autopsy surgeon along with a pathologist.
8. Autopsy surgeon should be provided adequate PPE and other cleaning/disinfectant material etc.
9. Granting health care professionals and health care facilities with immunity from suit and civil liability for damages, alleged to have been sustained by an act or omission occurring in the course of providing health care services during the period of the COVID-19 emergency, provided the health care services were provided in good faith and damages were not caused by gross negligence, recklessness, or conduct with an intent to harm or discriminate.
10. Strengthening and stabilizing the capacities of the healthcare system.
11. Further expansion of test capacities for the diagnosis and detection of (preliminary) immunity (serological tests, currently under development).
12. Enhance ongoing data collection on individual and group immunity, model development to assess the effectiveness of interventions.
13. Broad promotion and support of research on vaccines and therapeutics, and preparation of support structures for their mass production and roll-out.
14. Support for interdisciplinary research on the social and psychological effects of the Covid-19 pandemic, including future risk perceptions.
15. Continuous re-evaluation of measures restricting freedom of movement, where justifiable, their gradual withdrawal and a resumption of social and economic activity.
16. Development of effective and tolerable protection and isolation strategies for risk groups.
17. For younger high-risk groups in particular, it is important to note that effective self-isolation is dependent on the option of (preventive) sick leave or other forms of leave for those affected and the other members of their household.
18. Sound information strategy: Transparent and regular communication on actions taken and policy making decisions in relation to highly infectious diseases.
19. Concrete calculations of the expected costs of measures taken and alternative scenarios

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