COVID 19 - An Indian Perspective

Bashi Velayudhan[1] and Mohammed Idhrees[1]

[1]SRM Institutes for Medical Science Vadapalani

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Abstract

Abstract Lockdown, quarantine, self-isolation, personal protection equipment, social distancing have become words of daily usage ever since the world health organisation declared COVID-19 as a pandemic. The impact of COVID 19 extends over the medical field, economy, education and politics. Though the knowledge of the virus is evolving, we are yet to find a solution. India, country with the 2nd largest population, went into a phase of lockdown from 25th March 2020 to 31st May 2020. There was phased measure to "Unlock" starting from1st June 2020. This has affected the clinical practise and training of the resident. The challenges faced during this unprecedented time are multi-faceted which includes overcrowding, health care system, educational background. Indian Association of Cardiovascular-Thoracic Surgeons kept continuing the educational program through a series of "Masterclass".

Introduction

Master. Marco Giovanni, 5 years old, son of an Emergency physician wished his father - "Felice anno nuovo" on the eve of 1st Janurary 2020. A 7 years Indian girl, Miss. Pooja, daughter of a nurse, wished her mother "navavarsh kee shubhakaama" on the same eve. The same day the World Health Organisation (WHO) was informed of cases of pneumonia of unknown aetiology detected in Wuhan City, Hubei Province, China. Neither did they know what is about to loom in the next few months nor they knew that the reporting from the Wuhan province would stuck grieve in their tender hearts. Lockdown, quarantine, self-isolation, personal protection equipment, social distancing have become words of daily usage. Chimneys of large factories stop to eject smoke. Stock markets go crashing down. Gyms are considered unhealthy because of crowd. Covering the face was considered essential. Handshakes changed to Namaste. Mecca and Vatican City are closed. Hospital reserve beds for future crisis. Dr. Ignaz Semmelweis' hand-wash was being reinforced. There is one link to all these events - Coronavirus, Covid-19, SARS-CoV-2 - a 60–140 nm microbe. It is not an exaggeration to say that the symptoms, incubation period, natural history or treatment of this virus is yet to be described to the fullest. China reported its first victim of COVID -19 on January 11th, 2020. Two months later, the WHO declares COVID-19 as a pandemic (March11th, 2020). Knowledge of this virus is evolving. World leaders, health care workers and health organisations take all possible measures to close the gates for this deadly virus and keep it under control. The impact of this virus extends to the health care system, economy, education and politics.

Indian Health System – State of the nation is as good as its health care

India is a vast country (2.4% of the world's surface area) with 1.4 billion populations accounting for 17.5% of world population. In 2020, 65% of citizens live in rural India. Indian health care system is vast, but there remain many differences in quality between rural and urban areas as well as between public and private health care (1). The public sector provides 18% of the total outpatient care, 44% of the inpatient care. The private health care account for 58% of the hospitals in the country and are clustered in urban India. Seventy four per cent of the graduate doctors live in urban areas, serving 35% of the national population (2). This makes many Indian turn towards the private healthcare, although this is an option not easily accessible to

the poor. Thought health insurance is available, it is often provided by the employers, but most Indian lack health insurance. Few citizens are covered by the Government health schemes. This makes a large portion of people to spend from their pocket on medical treatment. Many Indian hospitals offer world class quality health care at a fraction of the price of hospital in developed countries.

India in COVID

India entered phase of lockdown on March 24th, 2020 when the total number of cases was less than 606 with 10 deaths. The increase in number of cases was exponential high to 33,000 and 1075 deaths on April 30th; 182,143 / 5164 (May 31st); 566,840/16,893 (June 30th); and 1,192,915 / 28,732 (July 22nd). As on July 22nd, India ranks 3rd in total cumulative cases and 7th in the total number of deaths. On analysis the total number of cases per million, India ranks 104th (865/million) and stands 100thin total death per million (21/million). Though the total number seems to increase, majority of the cities, when there was an initial peak of cases has plateaued (1, 3).

The Indian Government left no stones unturned to be with the people during this global predicament. The phase of lockdown extended from 25th March 2020 to 31st May 2020. There was phased measure to "Unlock" starting from1st June 2020. During the period of lockdown people were ban to step out of their homes except for hospitals, pharmacies, banks, grocery and other essential services. During the 4th phase of lockdown, the Union Ministry of Health gave the power to the individual state government to delineate the districts into three different zones – Red (hot zone), Orange, and Green. These zones were categorised based on the total number of cases, cases per lakh population, doubling rate over a seven day period, case fatality rate, testing ratio and sample positivity rate. These zones will have a different set of restrictions for the citizens – maximum for the red and the least for the green.

All educational, training and research institution were suspended. There are steps being taken to integrate the private and public health care system. Few state governments have already undertaken certain private health care with the interest of the people. Separate Covid blocks are designated in public health sectors. Efforts are being taken to convert railway coaches to beds in need to dire emergency. Emergency military hospital has been established to handle COVID 19 patients during emergency. To handle the crisis, government has converted stadiums, large auditoriums, convention centers, colleges to "emergency care centres" to handle COVID-19 patients. Doctors, nurses, paramedics, technicians, and other health care professionals involved in the care of Covid-19 patients will get a special insurance cover of Rs. 50 lakh ($65000) during this period. India's average number of bed/1000 person is less than one. Hence there have been efforts to increase the number during crisis. Numerous education awareness programs were organised by celebrities through radio, television and social media.

COVID patients and Economy

At present COVID-19 positive patients are admitted in public sectors and a very limited number of private sectors. In October 2015, India's medical tourism sector was estimated to be worth US$3 billion. The industry could grow by 200% by 2020, hitting $9 billion, according to Ministry of Tourism figures. This is because treatment costs in India start at around one-tenth of the price of comparable treatment in the United States or the United Kingdom. A recent publication in the media suggests that several private hospitals in India have sustained revenue losses of up to 90% since March. The private hospitals which account for 58% of the country's hospital face a twin quagmire – these sectors try to beef-up additional manpower, equipment to ensure adequate preparedness for safety in the hospital, on other hand there is a sharp drop in revenues in terms of international patients, outpatient and elective surgeries. The flow of international patients may still be less for the next 3 months as well. The Indian government announced 20 trillion rupees ($266 billion) in support package in fiscal and monetary measures to support the economy.

Cardio-Vascular Unit in COVID

The cardiovascular team always involve a lot of health workers involved in the team including the doctors, paramedical staffs and the house keeping. There are several ways COVID can affect the unit

1. *Intensive care beds & ventilator* : Complex vascular and cardiac cases may occupy ICU beds for a longer time. This may curb the need for more beds and ventilators in the near future during the COVID era.
2. *Selection of cases* : It is difficult to draw a line between elective and urgent cases in cardiac surgery. Patient who can survive more than 4 weeks can be categorised as elective at the moment thought no guidelines define the same (Doug E. Wood, Chair of Surgery at the University of Washington). The American college of surgeons has proposed a COVID-19 guideline for triage of vascular surgery patients (4). They have advised not to postpone acute aortic dissection, rupture aneurysm, any symptomatic aneurysm or any aneurysm associated with infection. It has been recommended to postpone any asymptomatic aneurysm.
3. *Cardiovascular Patients:* Complex cardiac and vascular patients are likely to have additional comorbidities. They may develop COVID 19 during the hospital stay or after surgery. A COVID19 patient may need an emergency cardiac or vascular procedure. A cardiovascular surgeon need to present when the situation of ECMO arises.
4. *Team work* : It necessitate a close working environment in a cardiovascular unit, which theoretically may increase the chance of infectious spread, hence advisable to reduce the staff members and follow all the necessary precautions.
5. *Blood and blood products:* Cardiac and vascular procedures invariably need the support of blood banks. There is drought of donors which makes the operation of blood bank difficult.

Impact of COVID on cardiovascular practice in India

An online study was conducted by our team among the cardiac surgeons practising in India (5). It was noted that 27% of the surgeons did not operate during the Lockdown and nearly 90% of the surgeons stopped elective surgery prior to March 31st, 2020. Just over $1/5^{\text{th}}$ of the surgeons (22.2%) continued to perform elective surgeries during the period of lockdown. Nearly 90% of the surgeon agreed that there is a drop in more than 50% of the surgical volume during the period of lockdown. A few surgeons (12.1%) agreed that their "traditional" post-surgery intensive care unit was transformed into a COVID-unit. This was more common in the public sector.

COVID's impact on Education

Although the focus is on the patients and the community at large to treat and prevent the spread of the COVID19 disease, it has undoubtedly rattled the educational and training program of the residents especially the surgical specialty. The residents have a stipulated training time limit before they appear for their certification exams. To ensure that this unprecedented time does not weight a negative effect on the minds of junior surgeons and residents, the Indian Association of Cardiovascular-Thoracic Surgeons began organising a non-stop series of educational webinars for the educational, pedagogical & conceptual benefit of residents. The program is an on-going process, and has benefited the entire fraternity of cardiothoracic surgeons across the ranks, from professors, senior consultants to trainee-fellows, aside residents. To befit the experience, this educational series was named 'Masterclass' under the ambit of the Resident Academic Forum of the Indian Association of Cardiovascular-Thoracic Surgeons. This web-series has also benefited numerous other specialists which include cardiologists, radiologists, anaesthesiologists, critical-care, and paramedical colleagues from nursing, perfusion, anaesthesia technicians & biomedical engineers. To ensure that the quality of education and concepts meted out is maintained to the highest standard, faculty who excel in their subspecialties (documented by peer respect, publications, experience & interest for teaching) were invited to take part in the program. The program has been well-received by professions across the globe with 23 countries being part of the attendees. Three series on Lung & Heart-Lung Transplantation, Minimally Invasive Cardiac Surgery & Boot camp in cardiac Anatomy have been part of this expedition. During the first two months of lockdown (3rd March 2020 and 31st May 2020), a total of 154 webinars were conducted (Adult-Cardiac Surgery – 50, Congenital Heart Surgery 31, Thoracic Surgery - 44

Multispecialty & Allied sciences - 29).

Protection for Health care workers

Worldwide "stay home" and "social distancing" is followed. But the medical profession are prepared to do the opposite. They risk going to hospital to take care of the patients infected with COVID-19. China's National health Commission reported that more than 3300 health care workers have been infected as of early March. In Italy, 20% of the responding health care workers are infected (6). More than 60 doctors have died in Italy. Spain has reported that 14.4% of the total reported cases are health care workers. A total of 1302 doctor and trainees were infected and 108 deaths have lost their lives as on July 13th, 2020 (7). This gives a staggering 8% mortality rate among doctors as compared to 3 to 4% in general population. Three quarter of the death was among doctors who are more than 60 years of age. Cardio vascular unit team works in close proximity. There is every possibility to come in contact with all body fluids during the pre / per / post operational period. It is essential that the head of the unit takes measure for staff management. It is advisable to have two team of staff members, so that when needed, quarantines can be applied to members within the team, rather than the entire unit. There are guidelines established for the personal protection equipments during the surgery by the apex societies. It is of paramount importance to adhere to them religiously. Doors of the operating room should be shut always, providing optimal negative pressure. All the contaminated equipments should be left in the operating room before leaving.

One single vulnerability is all an attacker needs – Protect the family members

Master. Marco Giovanni and Miss.Pooja need protection as well. We the health care providers should take every precautions to break the barrier in spread between hospital and home. On arriving home, remove the clothes and wash it separately from the rest of house hold clothes. Make sure the bags which you carry for hospital are kept in a separate place before entering the home. These bags should be out of reach from the rest of the family memebers. Clean the cell phones and if possible use a ziplock when using in hospital which can be discarded. Wash and clean the hard surfaces at home with an effective disinfectant solution (e.g. 60% alcohol).

Conclusion

Constant efforts are being made in research to find ways to conquer this pandemic. But as where we stand today, we are still in the process. "Prevention is better than cure" – there is no better words which can fit this pandemic. Until we find a way out –"Stay home. Stay safe"

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