What Else but Covid-19 Pandemic? Lessons Learned

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Introduction

The impact of the COVID-19 pandemic, at least in some parts of our planet, found the human health potential as if it were running in a marathon race in which it was forced to participate without being properly prepared. Under these circumstances, the global mobilisation, the awakening of global solidarity, the compliance with and the implementation of the guidelines of the health authorities have worked in each one of us and in the local communities, as an energy supplement that the long-distance runner needs to approach the finish line successfully.

However, the unexpected appearance, the uncontrolled outbreak, the heavy tax on human lives combined with the overwhelmed potential of the global health system, created feelings of fear, sadness and anxiety for our future.

This emotional burden, along with the lack of substantial knowledge for this new viral entity and the plethora of information intersecting on social media, increased not only the sense of responsibility, but also the unsafety of all health care providers around the world who continued to manage patients mainly on a symptoms-based protocol.

Today, three months later, we can approach this pandemic in a more medical-oriented way. As surgeons, we can recruit the Morbidity and Mortality Conferences Concept and try to outweigh not only the harmful consequences that this global disaster leaves behind, but some potential benefits, resulting from the heroic rescuing efforts at local, national or international level. This is our role, to analyse all the events in a retrospective way (root analysis), find out and repair weak points, learn more about our abilities and to recognise not only our limits, but also the limits of our health system. In this way, we are getting better but most important we are prepared for a next similar disastrous situation, if ever happens again.

Medical Facilities and Communities Responses (Organizational Issues)

The pandemic, as a rapidly expanding global challenge, placed a huge burden on healthcare systems. However, this public health crisis found the global medical community united and committed to apply evidence-based medicine

in order to ensure the well-being and safety of patients and health care professionals. A good thing is that many hospitals around the world had a past experience caring for patients with SARS-CoV1 and EBOLA during the corresponding periods [1].

This experience helped health care providers in hospitals to apply early, strict rules for the control and prevention of the disease spread such as the use of personal protective equipment (PPE) and rules of minimising the risks of aerosol-generating medical procedures (AGMP), to mention some of them. The personal protective equipment (PPE) usually includes a long-sleeved gown, a pair of gloves, a fit-tested N95 respirator and a face-shield. Periodic audits for specific training of the personnel were undertaken to ensure the correct donning and doffing, at least in facilities where previous experience of the health care providers was lacking.

For aerosol-generating medical procedures (AGMP), when the patient required increasing supplemental oxygen, there would be a low threshold to intubate using controlled and protected procedures including use of paralytics, video laryngoscopy, and PPE including N95 masks [2].

In general, the response to COVID-19 outbreak was multifold and included many services to effectively control the spread and manage the cases, such as medical care, surveillance, infection prevention and control, communication, logistics, psycho-social support, safe and dignified burials, etc. The strong coordination between the different working groups led to an effective and real-time decision making process.

One major and critical contributor to COVID-19 pandemic management was and remains the society engagement and its trust and acceptance of different rules and guidelines issued by the local health authorities. Community can be instrumental in supporting improved screening, referrals of suspected cases, contact follow-up, monitoring of the outbreak, as well as communication initiatives [3]. Finally, since the COVID-19 outbreak trends change rapidly, the flexibility to modify and adapt the rules is essential in controlling the spread.

Care of COVID-19 Patients

Convincing evidence suggests that almost 6% of infected patients will require ICU admission, of them 75% will need invasive ventilation, and approximately 10% will require ventilation beyond 14 days [4,5].

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The clinical symptoms of coronavirus disease 2019 (COVID-19) are non-specific and do not easily distinguish it from other causes of severe community-acquired pneumonia. For this reason, intensive care unit (ICU) practitioners should increasingly have a high index of suspicion and a low threshold for diagnostic testing for COVID-19. Many questions on clinical management remain unanswered, including the significance of myocardial dysfunction, and the role of non-invasive ventilation, high-flow nasal cannula, corticosteroids, and various repurposed and experimental therapies. Preparations must focus not just on infrastructure and supplies, but also on staff, including protection from nosocomial transmission and promotion of mental well-being of patients and health care providers [6].

Given the high incidence of myocardial dysfunction in COVID-19, fluids should be administered cautiously, and preferably with assessments for pre-load responsiveness. This dysfunction is attributed to a strong binding affinity of the SARS-CoV-2 spike protein to human angiotensin converting enzyme 2 (ACE 2), a membrane-bound receptor crucial for host cell entry that is expressed in the heart and lungs, among other organs [7,8]. A conservative fluid strategy, with early detection of myocardial involvement through the measurement of troponin and echocardiography is strongly recommended [9,10].

On Figure 1, a therapeutic approach of a COVID -19, intubated patient is depicted based on contemporary evidenced-based data [6].

Figure 1. Therapeutic protocol for COVID-19 intubated patients.

Care of Non COVID-19 Patients

A particular group of patients demanding special attention during this period is the cancer patients whose immune systems may be compromised by both disease and treatment, placing them at increased risk of COVID-19 infection and its serious complications.

While some reports suggest that cancer itself may be a risk factor for developing severe COVID-19, the evidence is conflicting. A series of 105 hospitalised Chinese patients who underwent surgery for breast and thyroid cancer while testing positive for COVID-19 infection experienced no mortality, had fewer critical symptoms, and did not require mechanical ventilation [11]. In contrast, a smaller series of 34 infected patients undergoing a variety of elective surgeries reported an increase in intensive care unit admissions and an increased mortality rate of 20.5% [12]. The study suggested that “surgery may accelerate and exacerbate disease progression of COVID-19”, although no association specific to cancer surgery and COVID-19 mortality was inferred. As knowledge develops about the risks for cancer patients during the pandemic, major considerations for management include that both the cancer condition itself and its treatment may increase risk of serious COVID-19 complications. This has created a difficult dilemma for the cancer community. We have been forced to make difficult risk-benefit decisions weighing concerns that treatment of cancer may increase the risk of serious COVID-19 infection against the risk that delay in treatment until the pandemic subsides may compromise oncologic outcomes. For this reason, many publications suggested recommendations for the prioritisation, treatment, and triage of cancer patients during the COVID-19 pandemic [13].

The pandemic is currently at different phases across the globe with geographic variations in the stages, infection rates and success in “flattening the curve” [6]. As regions begin to emerge from the initial wave of COVID-19 cases, each center will need to consider how to safely reintroduce routine cancer services; these decisions should be made on a local level based on the best knowledge and resources available [11].

Another issue relevant to this group of patients is the management of patients with cancer who are currently infected with SARS-CoV2 or being treated for COVID-19. Many local institutes already have developed guidelines for these cases. In general, most early-stage cancer patients can be submitted to surgery and have chemotherapy deferred until the viral infection is cleared, which typically occurs within 20 to 30 days, and the patient has clinically recovered.

By redefining treatment of cancer patients as the pandemic resolves, there are many issues that still need to be answered before such as: 1. How we handle the accumulated

and not resolved problems of patients whose surgical treatment was delayed and 2. As our operating rooms reopen, how should patients who were placed on some kind of medical treatment (e.g. neoadjuvant chemotherapy) be managed?

Telemedicine

COVID-19 prompted healthcare organisations across the globe to turn to telehealth to protect both their patients and their clinicians. As the global telehealth market continues to grow, facilities and clinicians across most specialties are embracing the benefits of telehealth to improve medical care. Health systems are seeing the cost-effectiveness of incorporating a telemedicine strategy into their organisation, while physicians, advanced practice providers and psychologists can enjoy a better work-life balance. Most importantly, telehealth solutions increase patient access to care.

Telehealth is the new term created to describe this new reality we experience, and is defined as a collection of means for enhancing healthcare, public health and education delivery using healthcare technology. It facilitates the diagnosis, consultation, treatment, education and care management of a patient through telemedicine services [15].

Ethical Issues

Many ethical issues were raised during this period due to the overwhelmed ICUs. Critical care triage is ethically complex and can be emotionally draining as it prioritises patients for intensive care in case of overwhelmed ICUs. This applies to patients with and without COVID-19, because both groups will be competing for the same ICU resources [16-19].

During this time, we will continue to care for patients who are critically ill for other reasons. Patients who require ventilation due to illnesses other than COVID-19 still deserve access to scarce resources. There should be no special priority for COVID-19 critically ill patients over those with a similar expected outcome based on objective measurements. Fairness and transparency are mandatory. Furthermore, patients who are already dependent on home ventilators or respiratory support should not have their home equipment removed or reallocated to other patients, regardless of the scarcity of resources. Home ventilators are not community property. We must take extra care to avoid triage practices that would discriminate against patients with disabilities, based on personal judgments of an individual's functional limitations. The decision to withhold or withdraw critical care should be based solely on the potential for survival and the potential for life-years saved when decisions between 2 patients with equal chance of survival must be made [20-22].

We should maintain adherence to the principles of **Beneficence**: In this acute setting of pandemic, the concern

for beneficence of all the members of a society outweighs the concerns for any individual, best represented by the dictum “do the most good for the most people”. **Justice:** The application of this principle is reflected in the fact that the triage guidelines should be clear, concise, and explicit. **Fidelity:** Trust is generated by consistent use of triage practices for every patient who needs the scarce resource. **Veracity:** “Telling the truth” and the known facts help in the decision making. **Respect for persons:** Within constraints of available resources, patients should be provided opportunities to express their will.

Epilogue

As we return to normalcy, infection control and prevention processes aiming at minimising the impact of COVID-19 will be in place for some time. These will require additional time and resources, and will mean that a return to pre-COVID-19 levels of activity will prove very difficult without additional investment in resources, facilities and staff.

Firstly, risks and benefits will need to be assessed on a case-by-case basis for patients being infected by coronavirus, having their procedures postponed, except for life threatening situations, as their outcomes are expected to be poor. Secondly, there is a need to prevent patients from surgery of any kind infecting staff when admitted to the hospital, and to prevent staff infecting surgical patients. Also, there may be significant public concern about admissions in acute hospitals, especially in hotspot areas and in the close aftermath of pandemic. Currently, maximising surgical activity in the presence of these processes will require streaming patient flows using patient shielding before admission and testing them, such that COVID-19-positive and COVID-19-negative pathways are created and used appropriately. All Standard Operating Procedures for surgical services, operating rooms and critical care will need careful review and adjustment as necessary. Consideration might also be given to streaming members of the surgical, anesthetic and operative room personnel, such that those teams doing elective work are separate from those doing emergency and on call work. Standards of safety for patients and staff must not be compromised by a determination to increase productivity [23].

All these days of pandemic we used to ask our colleagues and friends if they were ok. They always answered that they were, even if they were not operating. However, how realistic and true was that saying, as we stayed “out of service” for a long time? The sooner we admit that to ourselves, the faster we will realize that we are in need to find ways to cope with a situation way out of our personal control. Besides defeating COVID, our common goal is to not damage ourselves

in the process. The following emotional thoughts might help to this endeavor: Without despair there is no hope, without evil there is no good, without grief there is no love.

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