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**PRE-OPERATIVE ASSESSMENT OF PREVIOUSLY COVID-19 INFECTED
PATIENTS: A FRAMEWORK FOR PREOPERATIVE EVALUATION**

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ABSTRACT

Amid the COVID-19 pandemic, the critical preoperative assessment has become even more important as an aspect of safety surgical practice, not only for the assessment for patient safety, but also to ensure the safety of the surgeon-anesthesia team, the operation theater staff and other health personal that can get exposed. As the pandemic evolves and the lasting issues of poor management of personal protective equipment (PPE), not fully understood isolation protocols, and the additional challenges of how to determine if previously COVID-19 positive tested patients are fully recovered and can be safely taken up for elective surgery.

We present a Preoperative protocol adapted in KIMS, Karad, for the assessment of previously COVID-19 positive patients being taken up for elective surgery.

INTRODUCTION

WITH the evolution of COVID-19 of medical practice becomes very obvious. pandemic, its profound effect on every aspect Post relaxation of the initial lockdown

protocols there were thousands of patients who returned to the community, presented with various clinical conditions that required elective surgical procedure, these patients included previously COVID-19 +ve patients who underwent treatment. With COVID-19 being a multisystemic disease, having prolonged effects on cardiorespiratory system, and the minimal data available over the perioperative morbidity or mortality seen in patients of post COVID status led to the complication of the preoperative assessment of the patient [1].

The clinical manifestations in COVID-19 disease include, but are not limited to Respiratory failure, Cardiomyopathy, Cardiac arrhythmias, Renal failure, Hepatic impairment, Thromboembolic disease, Endothelial dysfunction, Neurological manifestations, and with treatment mostly limited to supportive care and anticoagulant prophylaxis, the duration of which is still under research. With post-viral syndromes in the previous COVID-19+ve patients undergoing elective procedures, irrespective of existing comorbidities or the age of the patient, high perioperative morbidity and mortality can be expected in these patients.

In patients that were previously tested +ve for COVID-19 disease in addition to the addition, hospital stays, including time spent

on mechanical ventilation, can last for weeks before months. This can lead to significant deterioration in conditions, which can contribute to vulnerability and poor performance. Several laboratory findings and biomarkers have been identified as predictors of disease severity may be useful for determining recovery and current risk from acute COVID illness [2].

The condition known as post-COVID syndrome describes patients who no longer have a viral infection but they still have residual side effects of the disease, including destruction and inflammation. Like many well-described viral diseases, these post-viral symptoms can cause severe fatigue, headache, memory impairment, trouble concentrating, and depression.

For example, chronic post-ARVI Side effects characterized by fatigue, muscle pain, weakness, depression and poor sleep are described in 2011 after the 2003 outbreak. There are also reports of patients experiencing symptoms similar to: chronic fatigue syndrome after infection with mononucleosis, with memory and concentration problems deep exhaustion after training [3].

Many inflammatory syndromes and reactions have been described in cured COVID patients, such as: well, in patients suffering

from neurological complications such as seizures, Guillain-Barré syndrome, and acute disseminated encephalomyelitis. Autoinflammatory diseases such as idiopathic thrombocytopenic purpura and autoimmune hemolytic anemia in adults and inflammatory diseases in children a multisystem syndrome that develops in patients several days or weeks after recovery. COVID can be slow to progress and much remains to be seen about the long-term results. Given the lack of scientifically based recommendations on the timing of recovery, we draw parallels from the current literature on the importance of clinical recovery after a serious medical event before proceeding to a non-emergency event operation. For example, the recommended waiting time after a heart attack is 8 weeks (recommendations for patients undergoing percutaneous coronary intervention). For stroke the absolute minimum recovery time is 3 months, although the risk continues to decline significantly after 9 months. Correct the timeline data from recovery from upper respiratory tract infection (URI) for adult patients, the operation is limited. When studying postoperative complications in patients who you had a febrile URI that required medical attention a month before your surgery postoperative complications,

especially respiratory complications, were greater in the patients they received reported a recent URI. However, the risk significantly reduced in patients with URIs more than a month earlier surgery or if a shorter interval may increase the incidence. Also increased airway reactivity has been found to persist for up to 6 weeks after the URI. Based on available evidence and based on similarities with others post-viral syndromes, we provide a holistic framework for the preoperative assessment of patients who had previously been ill with COVID-19 [4].

The Preoperative assessment protocol adapted for post COVID-19 status patients in KIMS, Karad, includes the clinical assessment to determine the functional recovery from COVID-19 status, using laboratory data and imaging modalities, and taking into account the psychosocial factors associated for recovery from serious illness to achieve preoperative optimisation and choose the ideal time to take up the patient for elective surgical procedure. This protocol was developed, reviewed and approved by the departments of Surgery, Aesthesia, and the Hospital Management [5].

In our protocol, all patients with a history of positive SARS-CoV-2 test are prescribed Selective surgery and / or surgery under anesthesia must first have a detailed history

and a medical examination at our clinic before surgery. Minimum requirements before proceeding the operation involves the complete disappearance of COVID symptoms and ample time for clinical recovery. We chose a minimum recovery time of 4 weeks for patients with asymptomatic SARS-CoV-2 infection, and 6-8 weeks for symptomatic patients, given that small time frame data are available at this time. History and physical components shed light on information about the patient's gait, signs and symptoms of COVID symptoms of possible subclinical complications of COVID, determine whether the patient has back to health for COVID-19, efficacy assessment and outpatient treatment. Patients over 65 years of age or in need of hospitalization COVID therapy, regardless of age, is also evaluated for weakness on the Edmonton scale [6].

In addition to these basic requirements, objective tests are performed according to severity and symptoms of COVID infection, the complexity of the surgery and the need for anesthesia. These tests are used to assess the patient's heart and lung function, blood clotting status, signs of inflammation and nutritional status. Based on the aforementioned studies that show that COVID can cause disturbances in these systems, deviations from the norm may indicate imperfect treatment of the disease, the risk of complications before or after surgery may increase. We decided not to go into the arteries blood gas (ABG) as total metabolic rate (CMP) and oxygen measurements during walking provide similar data without the risk of nerve damage or arterial damage [7].

Table 1: investigations required for pre operative assessment in previously covid 19 positive patients

	ASYMPTOMATIC FOR MINOR SURGERY	SYMPTOMATIC FOR MINOR SURGERY	ASYMPTOMATIC FOR MAJOR SURGERY	SYMPTOMATIC FOR MAJOR SURGERY
CXR	-	-	+	+
ECG	+	+	+	+
2D ECHO	NO IF H/PE IS NORMAL	NO IF H/PE, NT PRO BNP IS NORMAL	NO IF H/PE, NT PRO BNP IS NORMAL	DETERMINED BY H/PE
BIOCHEMISTRY	+	+	+	+
CBC	+	+	+	+
PTT	NO	BASED ON SEVERITY OF ILLNESS	+	+
D-DIMER	NO	+	+	+

FIBRINOGEN	NO	BASED ON SEVERITY OF ILLNESS	+	+
NT PRO-BNP	NO	+	+	+
LDH,FERRITIN	NO	BASED ON SEVERITY OF ILLNESS	+	BASED ON SEVERITY OF ILLNESS

Abbreviations URI: Upper respiratory infection; CXR: Chest x-ray; ECG: Electrocardiogram; 2D ECHO: Echocardiogram; CBC with Diff: Complete blood count with differential; PTT: Partial thromboplastin time; LDH: Lactate dehydrogenase; nt-pro-BNP: N-terminal pro brain natriuretic peptide.
H: HISTORY; PE: PHYSICAL EXAMINATION

Although some studies have found correlations between disease severity in patients who have improved COVID-19. patients and reduced carbon monoxide (DLCO) distribution potential, there is currently no clear clinical data significance for results around surgery. Therefore, we have now ruled out lung functional test (PFT) from our protocol, as their regular use in the chest is not recommended. After this evaluation, patients with normal results can continue treatment after a minimum of waiting. time period. However, any significant deviation from the criteria will create an interdisciplinary discussion and consultation with other specialties as needed. In the case of urgent transactions that are not selected, the protocol will be drafted with the utmost care. The patient should then receive detailed risk and benefit advice and / or discuss treatment goals beforehand and we continue the operation [8].

As we approached the 4-month target, we looked at about 40 patients with a spectrum the disease ranges from asymptomatic to severe infection. We do not know of any patients who have received actions have been postponed / canceled due to deviations in their assessment.

CONCLUSION:

With millions of people with post- covid infection in India, and the number going up on daily basis, the elective surgical procedures, and patients that are asymptomatic that test positive before the surgical procedure, in these group of patients require standardized preoperative assessment is of at most requirement and of importance due to the uncertainty and increased perioperative morbidity surrounding these patients. The protocol used in our institute helped provide an optimal perioperative care and provide fast recovery to this group of patients. We hope the experience in our center will contribute to the development of

an optimal protocol for previously COVID-19 patients preoperative assessment to improve the postoperative outcome.

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