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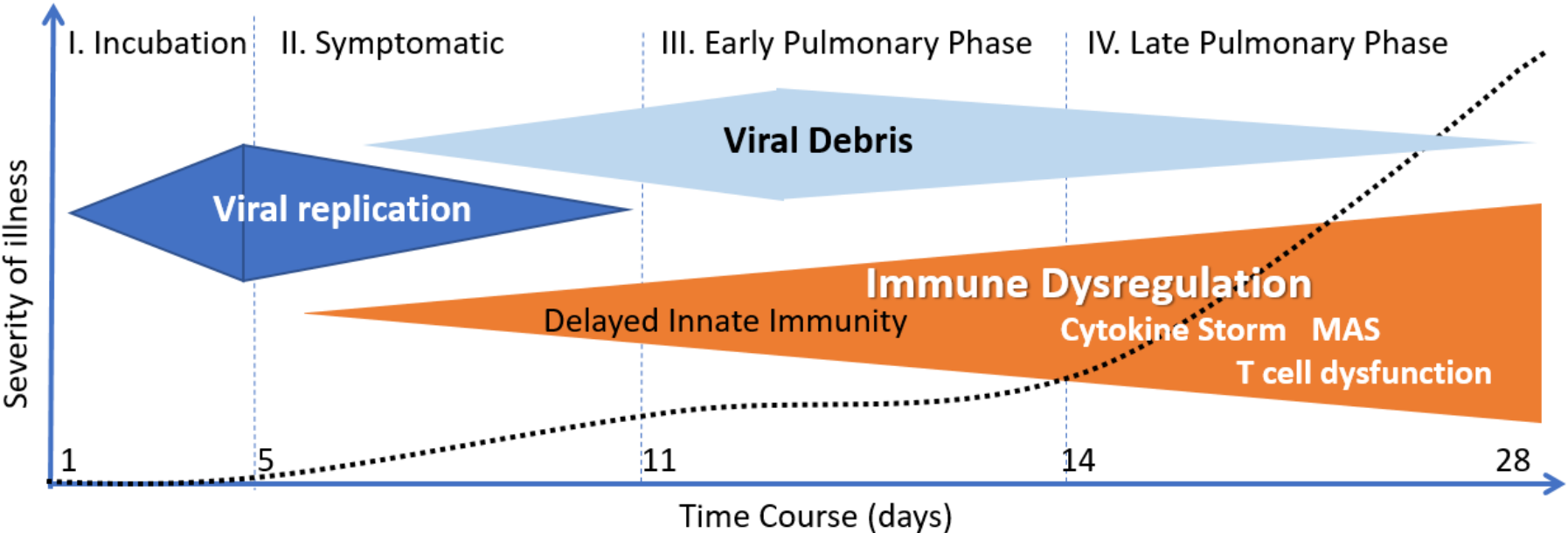
CLINICAL MANAGEMENT PROTOCOL FOR COVID-19

(In Adults)

Government of India
Ministry of Health and Family Welfare

Version 6
24.05.21

The course of COVID-19 and General Approach to treatment



Endotheliopathy

“THROMBO-INFLAMMATION”

postmortem of SARS-CoV-2

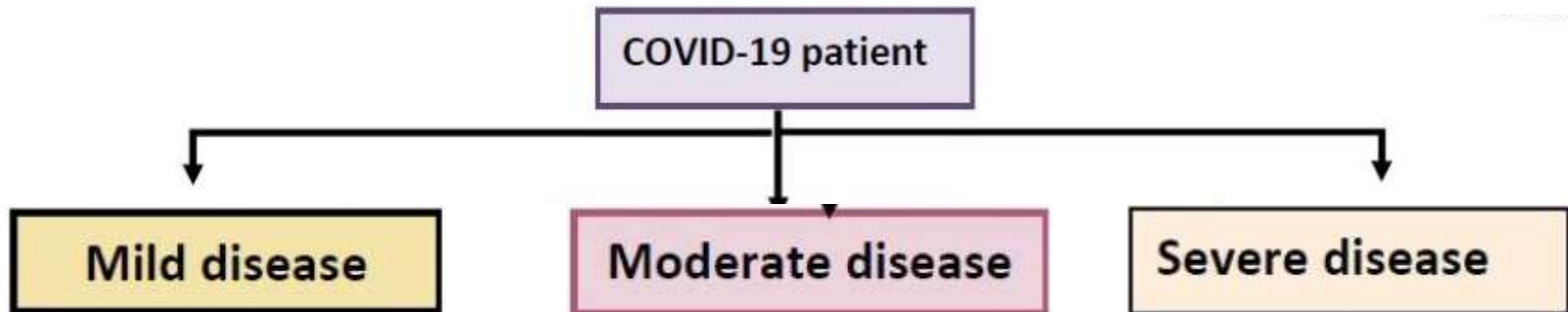
endothelial dysfunction contributes to the clinical sequelae in patients with COVID-19.

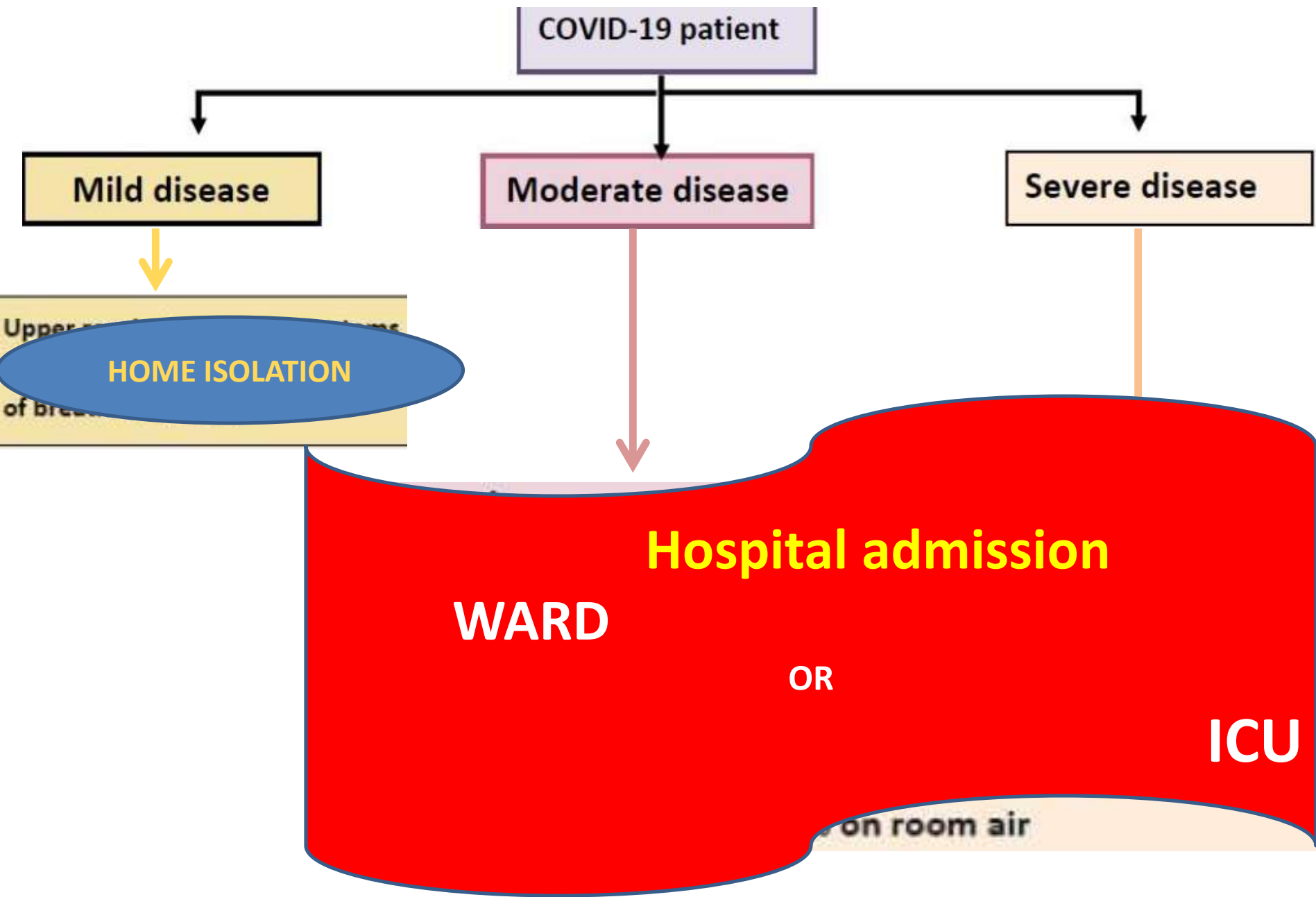


**AIIMS/ ICMR-COVID-19 National Task Force/Joint
Monitoring Group (Dte.GHS)**

Ministry of Health & Family Welfare, Government of India

CLINICAL GUIDANCE FOR MANAGEMENT OF ADULT COVID-19 PATIENTS





Management(Mx) of Mild Cases

- **isolated** to break the chain of transmission
 - physical distancing
 - indoor mask
 - strict hand hygiene.
- **Symptomatic** management
 - Fever
 - cough.
- **fluids** regularly to maintain hydration.
- **warm water gargles / steam inhalation.**

Mx of Mild Cases

- **Self-Monitor**
 - temperature
 - oxygen saturation 2 to 4 times per day
- **Stay connected with treating physician**
 - report in case of any deterioration in clinical condition.



Mx of Mild Cases

- Seek immediate medical attention if:
 - Difficulty in breathing
 - High grade fever/severe cough, particularly if lasting for >5 days.
 - **high-risk / co-morbid**
 - Age >60 years
 - cardiovascular disease,
 - hypertension
 - CAD
 - DM (Diabetes Mellitus)
 - immunocompromised states,
 - Chronic lung/kidney/liver disease,
 - Cerebrovascular diseases
 - Obesity

Management of Mild Cases

- **Drug**
- Fever reducer:
 - Tab Paracetamol for fever.
 - Un-controlled fever with a maximum dose (650mg four times a day),
 - consult the treating doctor
 - Other NSAID(ex: Tab. Naproxen 250 mg twice a day).
- Consider Tab Ivermectin (200 mcg/kg once a day, to be taken empty stomach) for 3 to 5 days (avoid in pregnant and lactating women)
- Tab Hydroxychloroquine (400 mg twice daily for 1 day, followed by 400 mg daily for next 4 days, unless contraindicated)

Management of Mild Cases

- **Inhalational Budesonide**
 - if symptoms (fever and/or cough) are persistent beyond 5 days of disease onset.
 - via inhalers with spacer - 800 mcg twice daily for 5 to 7 days
- Systemic/**Oral** steroids not indicated in mild disease.
- If symptoms persist beyond 7 days (persistent fever, worsening cough etc.) consult the treating doctor for treatment with low dose oral steroids.
- Continue the medications for other **co-morbid** illness.

Management of Moderate Cases

- **Awake proning:**
 - in all patients who require supplemental oxygen therapy.
 - Typical protocols
 - 30–120 minutes in prone position.
 - 30–120 minutes in left lateral decubitus, right lateral decubitus, and upright sitting position.



Management of Moderate Cases

- **Oxygen**

- Target SpO₂: 92-96%

- depends upon the severity of hypoxia and work of breathing.

- nasal prongs

- simple face mask

- masks non-rebreathing reservoir bag (NRBM)

- HFNC or simple nasal cannula is used

- triple layered medical mask should be applied over it.

100% O ₂ Flow Rate (L/min)	F _{IO₂} (%)
Nasal Cannula	
1	24
2	28
3	32
4	36
5	40
6	44
Oxygen Mask	
5-6	40
6-7	50
7-8	60
Mask with Reservoir Bag	
6	60
7	70
8	80
9	90
10	>99
Nonbreathing Mask	
4-10	60-100
Venturi Mask*	
3 (80)	24
6 (68)	28
9 (50)	35
12 (50)	40
15 (41)	50

VENTURI FACE MASK



Fig. 4 Different types of Venturi mask diluter for different requirement of oxygen (color coded)

Table 1 Venturi dilutor valve rating and color coding

<i>FiO₂ setting</i>	<i>Color</i>
24%	Blue
28%	Yellow
31%	White
35%	Green
40%	Red
50%	Orange

Abbreviation: FiO₂, fraction of inspired oxygen concentration

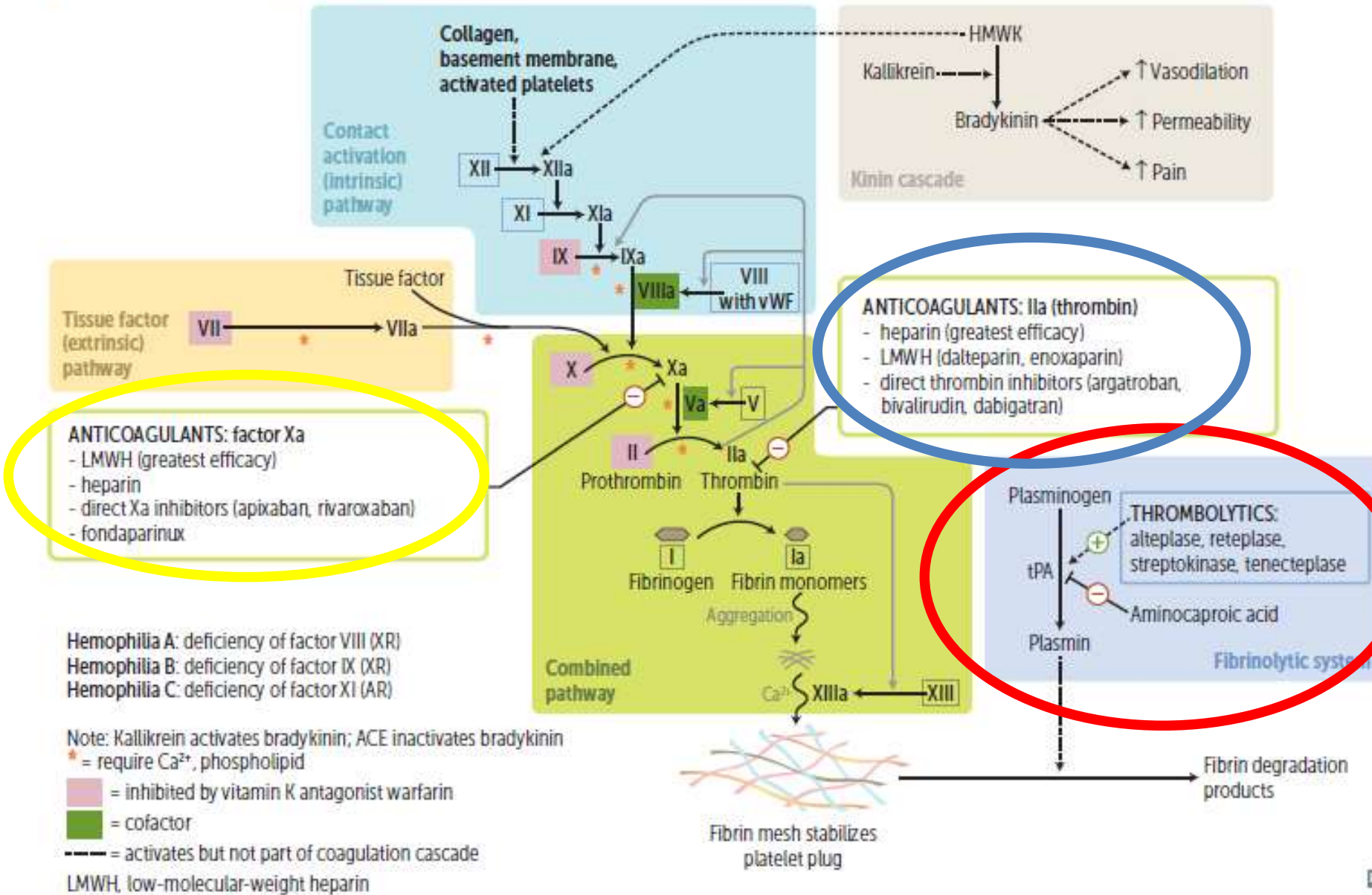
Management of Moderate Cases

- **Anticoagulation**

- Prophylactic dose of Un-Fractionated Heparin (UFH) or Low Molecular Weight Heparin (LMWH) (e.g., enoxaparin 0.5 mg / Kg body wt per day SC)
- Check contraindication or high risk of bleeding
 - [Contraindications: End Stage Renal Disease (ESRD), active bleeding, emergency surgery].

- Consider unfractionated heparin in ESRD.

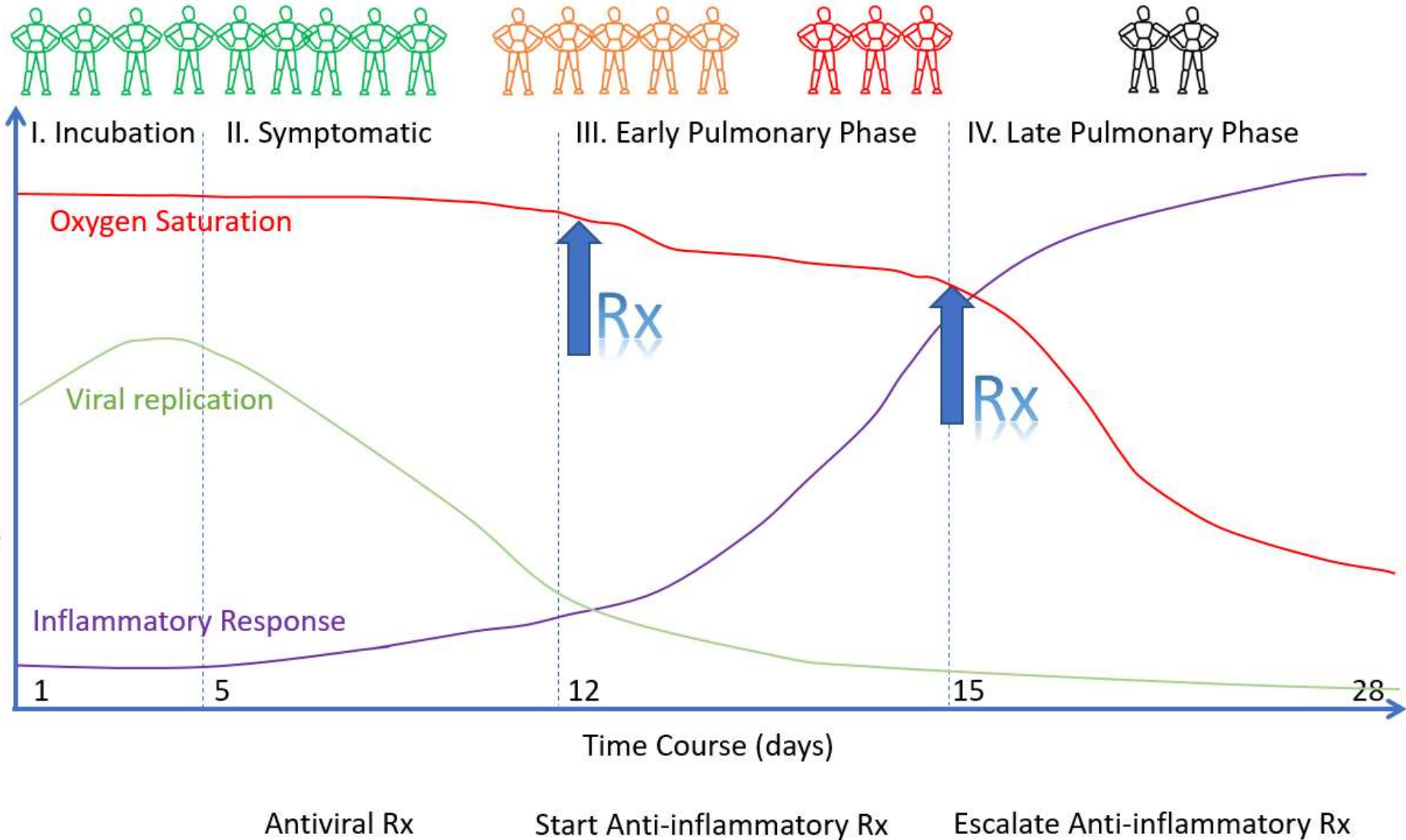
Coagulation and kinin pathways



Management of Moderate Cases

- **Anti-inflammatory or immunomodulatory therapy**
 - IV methylprednisolone 0.5 to 1 mg/kg
 - OR
 - IV Dexamethasone 0.1 to 0.2 mg/kg
- usually for a duration of 5 to 10 days.
- Review the duration of administration as per clinical response.
- Patients may be initiated or switched to oral route if stable and/or improving.

Timing of the initiation of anti-inflammatory therapy



Management of Severe Cases

- Consider use of NIV/HFNC
- Intubation should be prioritized in patients with
 - high work of breathing /if NIV is not tolerated.
 - presence of hemodynamic instability
 - altered mental status
 - multi-organ failure

Management of Severe Cases

- **Anti-inflammatory or immunomodulatory therapy**
 - Inj Methylprednisolone 1 to 2mg/kg IV in 2 divided doses
 - or
 - 0.2-0.4 mg/kg of dexamethasone
 - usually for a duration 5 to 10 days.

Management of Severe Cases

- **Anticoagulation:**

- Weight based intermediate dose of prophylactic unfractionated heparin or Low Molecular Weight Heparin (e.g., Enoxaparin 0.5mg/kg per dose SC BD).
- There should be no contraindication or high risk of bleeding.
 - *Contraindications: End Stage Renal Disease (ESRD), active bleeding, emergency surgery
 - ** Consider unfractionated heparin in ESRD

Management of Severe Cases

- **Monitoring**
 - **Serial CXR.** HRCT chest to be done ONLY if there is worsening.
 - **Lab monitoring:**
 - CRP and D-dimer 24-48 hourly;
 - CBC, KFT, LFT daily
 - IL-6 to be done if deteriorating (subject to availability).
 - **ABGA:- ARDS**
 - **P/F Ratio:**
 - 300 to 200 is Mild,
 - 200 to 100 is Moderate
 - <100 is Severe **ARDS** with PEEP \geq 5.

ESCHWEILER COMBI.LINE

NAME : **ABGA**

0853210521
DATE 08:53 21.05.21

BP 754 mmHg
TEMP 37.0 C
HB 15.0 g/dl
HCT 45.0 %
FIO2 20.9 %
RQ 0.85

PO2 55.0 mmHg
PCO2 34.0 mmHg
PH 7.392
H+ 40.5 nmol/L
K 5.9 mmol/L
NA 144 mmol/L

HCO3A 20.0 mmol/L
HCO3S 21.7 mmol/L
BE -3.4 mmol/L
SBE -3.8 mmol/L
TCO2 20.9 mmol/L
BB 44.6 mmol/L
O2SAT 88.6 %
O2-CT 18.0 %
P50 27.1 mmHg
ARDO2 54.1 mmHg
SHUNT 3.7 %

ACID / BASE STATUS

FULLY COMP. RESP.
ALKALOSIS AND / OR
FULLY COMP. NON RESP.
ACIDOSIS

ARDS

P/F Ratio of

300 to 200 is Mild

200 to 100 is Moderate

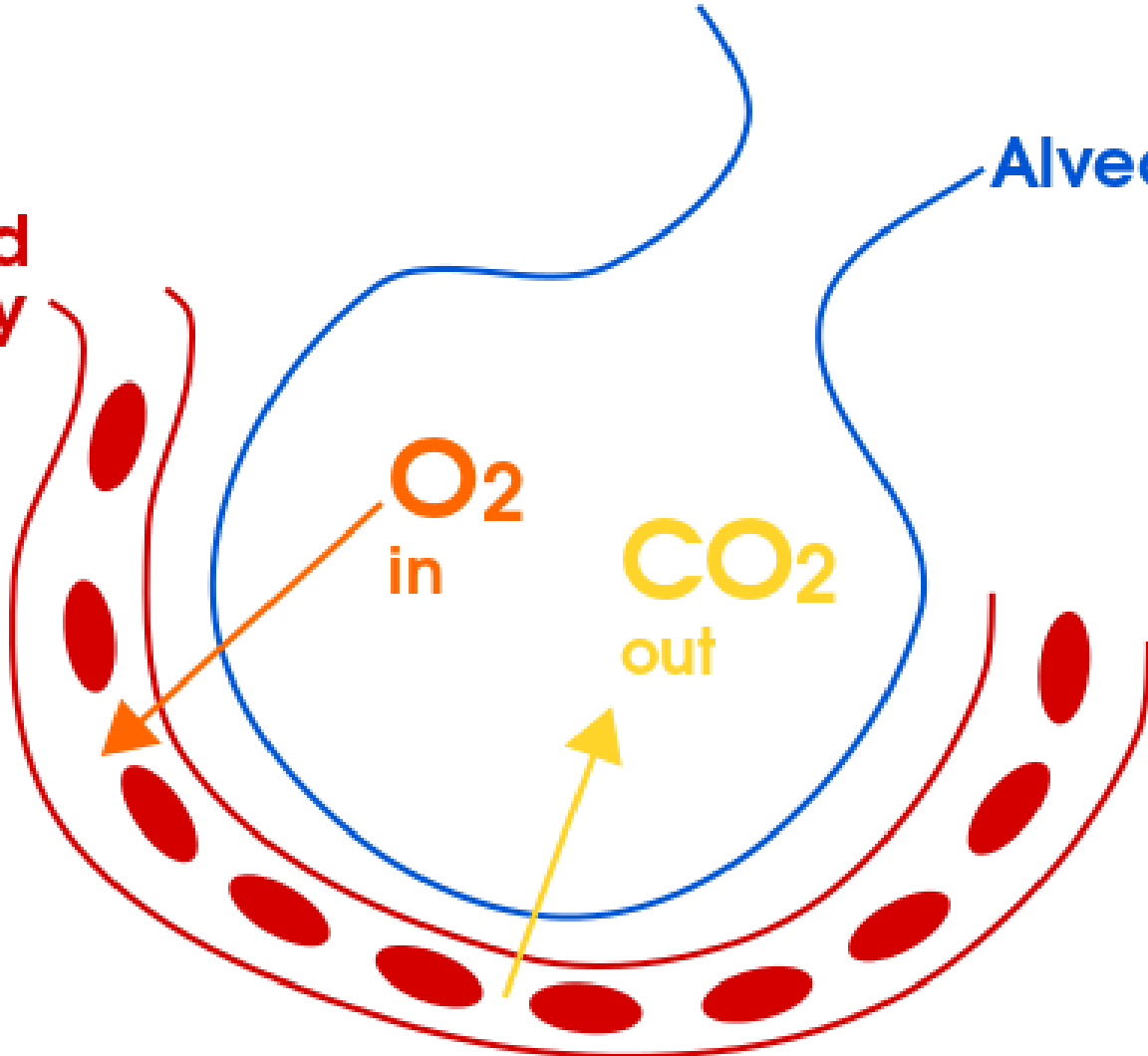
less than 100 is Severe **ARDS** with PEEP \geq 5.

Blood
Capillary

Alveolus

O₂
in

CO₂
out



Mx of co-morbid condition

- Control of in particular the glycemic control
 - OGLA-Metformin
 - Human regular insulin according to RBS-6hourly.
 - Insulin Glargine
- HTN
- Hypothyroidism

Investigational Therapies

- Remdesivir

—
—
—
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oxygen)

times

days

• To



-6).

)kg

Case-1

Pre-TCZ



After 24-hours post TCZ





2021 Apr 28
CT



2021 Apr 25
CT

Pat. ID: 21/146278
2021 Apr 25
01:04:25



1200 BED CIVIL HOSPITAL
Study ID: 10253
Series No: 5
LUNG THIN Lung 1.0
Prior 1

Pat. ID: 21/146278
2021 Apr 28
12:22:32



1200 BED CIVIL HOSPITAL
Study ID: 10505
Series No: 5
LUNG THIN Lung 1.0



FC52
Wp: 120 mA: 150 ms: 750

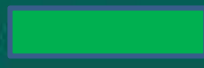
Coronal
Average
0.6 mm
WL: 1600/-550
167 %
FC52
Wp: 120 mA: 150 ms: 750

Coronal
Average
0.6 mm
WL: 1600/-550
167 %



11:07

📶 🔋 93%



58/M

Admitted in hospital for 5 days. Was on Oxygen 10 liters by NRBM maintaining SpO2 above 95%. He was on Ramdesivir, MPS, LMWH Kept on BiPAP yesterday and was comfortable. Urea 53, creatinine 1.7 Today at 9:00 am patient developed tachycardia 150/min, tachypnoea 40/min
Hypertension 160/100
Aspirin and clopidogrel loaded. Inj. Lasix was given. Patient was better after half an hour. PR 90/min, BP 110/70 RR 22
IL6 16

20:46

Opine for further management 20:46

↗ Forwarded



😊 | Type a message 📎 📷 🎤



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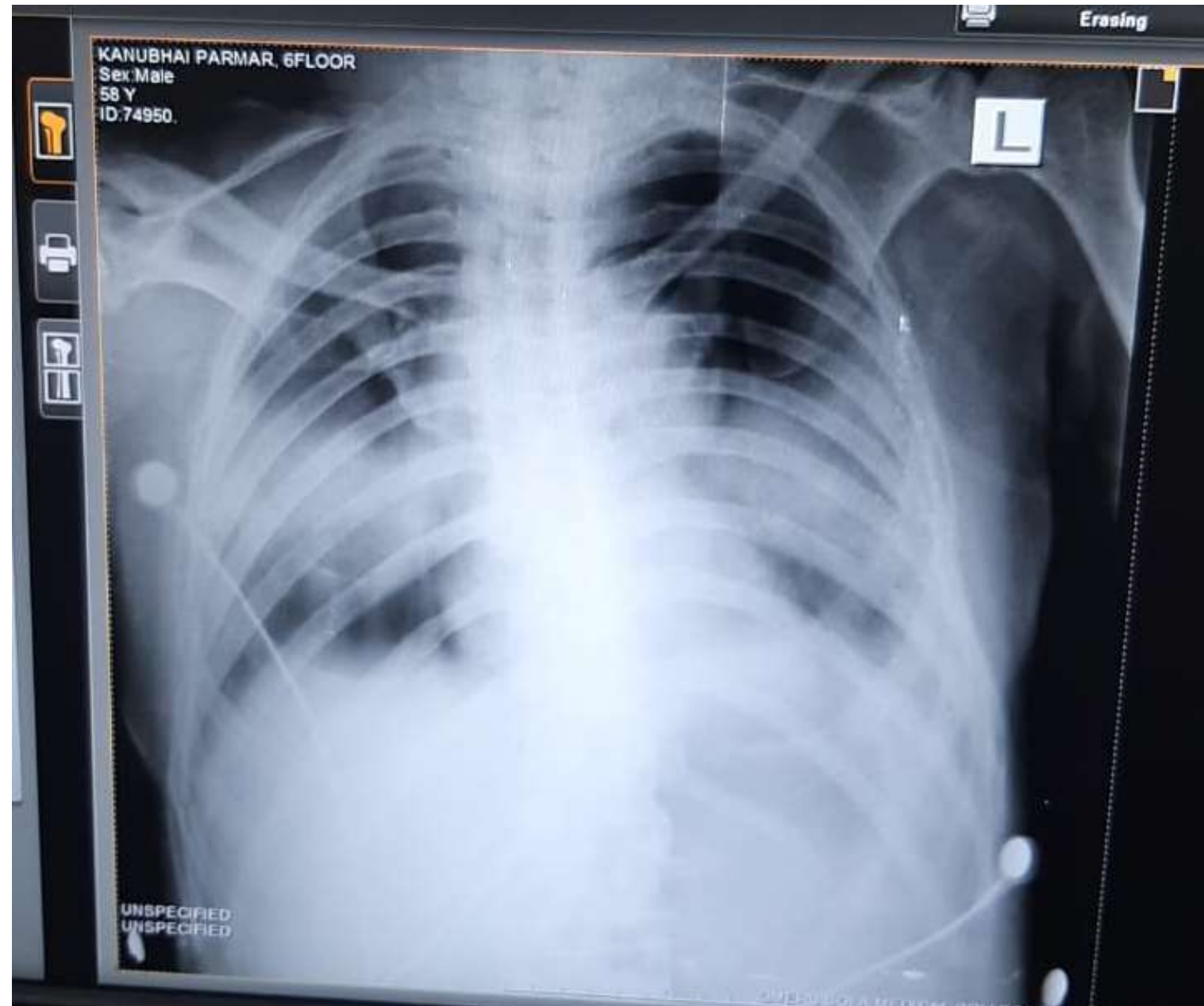
20:46

Erasing

KANUBHAI PARMAR, 6FLOOR
Sex: Male
58 Y
ID: 74950.

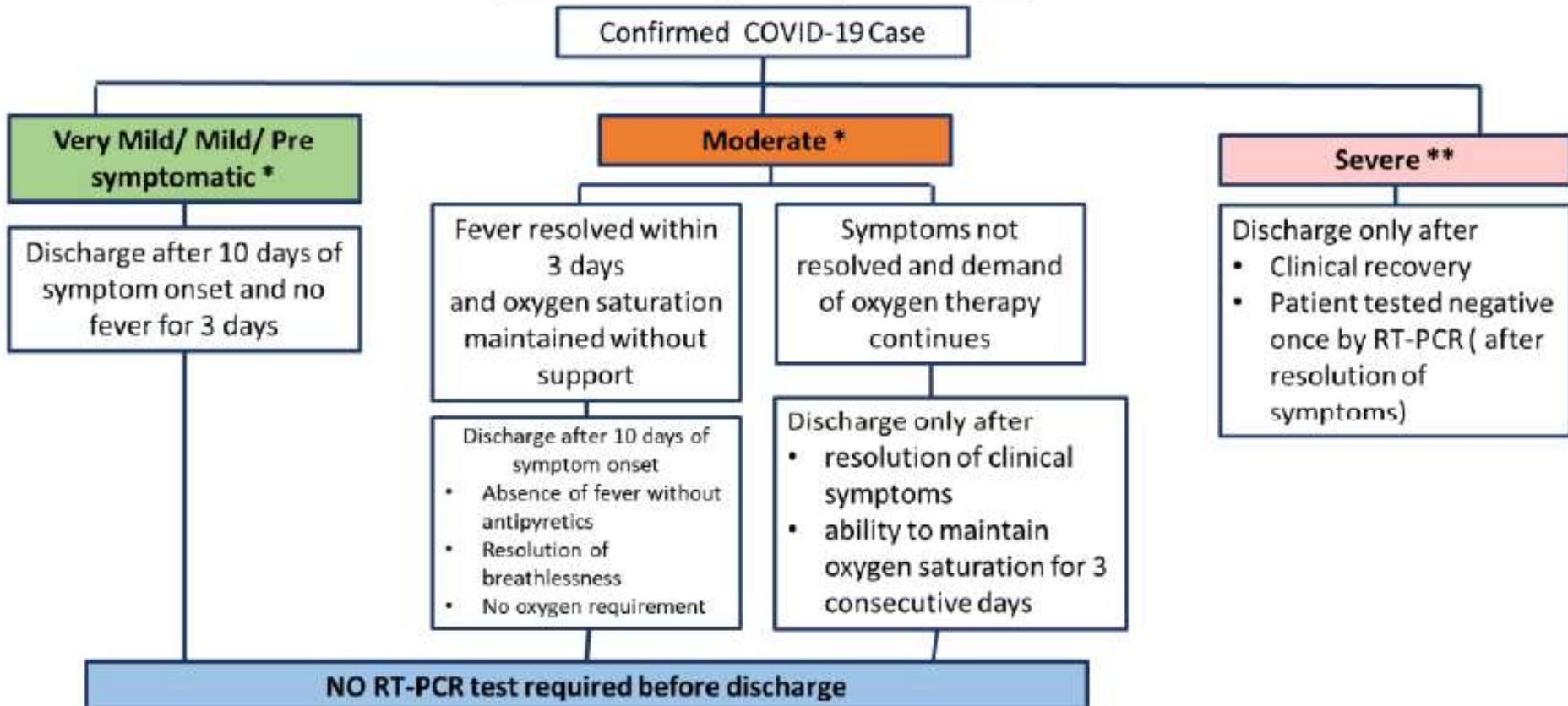
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UNSPECIFIED
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Discharge Policy

Revised Discharge Policy for COVID-19



NO RT-PCR test required before discharge

*At the time of discharge, the patient will be advised to isolate himself at home and self-monitor their health for further 7 days.

** Clinical categorization of patients as per guidelines
(<https://www.mohfw.gov.in/pdf/FinalGuidanceonManagementofCovidcasesversion2.pdf>)

**** including immunocompromised (HIV patients, transplant recipients, malignancy)**

Post COVID management protocol

- fatigue
- body ache
- cough
- sore throat
- difficulty in breathing

Post COVID management protocol

- Daily practice of Yogasana, Pranayama and Meditation.
- Breathing exercises
- Balanced nutritious diet, preferably easy to digest freshly cooked soft diet.
- adequate sleep and rest
- Avoid smoking and consumption of alcohol
- Self-health monitoring



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• Thank you