In the name of God

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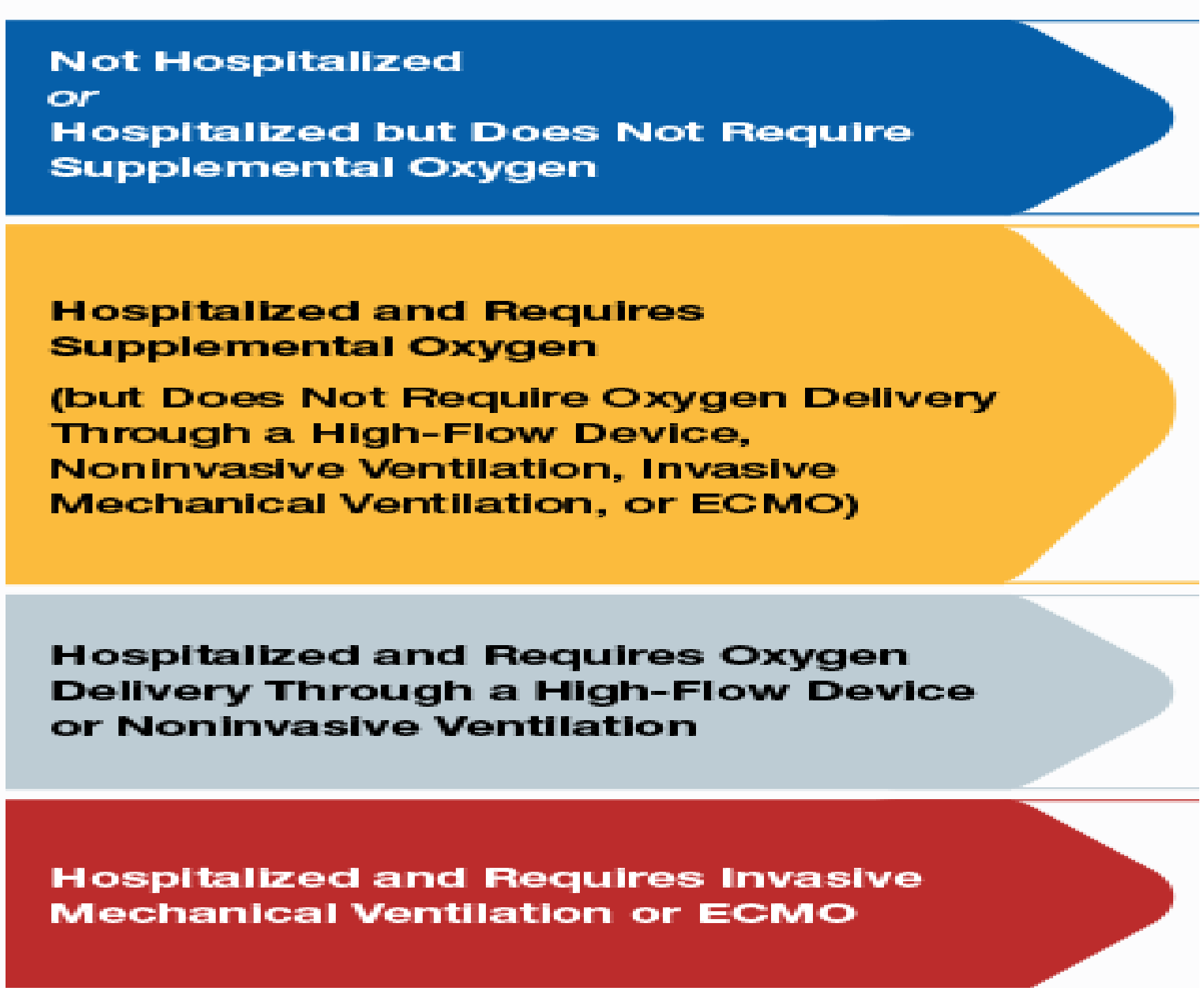
Clinical Presentation of Covid-19

Asyntomatic Infection	Absence of clinical signs and symptoms of the disease and normal chest X-ray or CT scan associated with a positive test for SARS-CoV-2
Mild Infection	Upper airway symptoms such as fever, fatigue, myalgia, cough, sore throat, runny nose and sneezing. Pulmonary clinical exam is normal. Some cases may not have fever and others may experience gastrintestinal symptoms such as nauseas, vomiting, abdominal pain, and diarrhea.
Moderate Infection	Clinical signs of pneumonia. Persistent fever, initially dry cough, which becomes productive, may have wheezing or crackles on pulmonary auscultation but shows no respiratory distress. Some individuals may not have symptoms or clinical signs, but chest CT scan reveals typical pulmonary lesions.
Severe Infection	Initial respiratory symptoms may be associated with gastrointestinal symptoms such as diarrhea. The clinical deterioration usually occurs in a week with the development of dyspnea and hypoxemia (blood oxygen saturation [SaO_2] <94%)
Critical Infection	Patients can quickly deteriorate to acute respiratory distress syndrome or respiratory failure and may present shock, encephalopathy, myocardial injury or heart failure, coagulopathy, acute kidney injury, and multiple organ dysfunction.


Not Hospitalized
or
Hospitalized but Does Not Require Supplemental Oxygen
Hospitalized and Requires Supplemental Oxygen
(but Does Not Require Oxygen Delivery Through a High-Flow Device, Noninvasive Ventilation, Invasive Mechanical Ventilation, or ECMO)
Hospitalized and Requires Oxygen Delivery Through a High-Flow Device or Noninvasive Ventilation
Hospitalized and Requires Invasive Mechanical Ventilation or ECMO

General measures of management

- اکسیژن درمانی مهمترین اقدام است و باید با نظارت دقیق انجام شود.
- هر یک ساعت ارزیابی صورت گیرد و در صورت عدم پاسخ بیمار، برای بهبود وضعیت اکسیژن رسانی به بیمار تصمیم گیری شود.

General measures of management

- children with mild illness **do not require fluid restriction** .
- In **respiratory compromise** consider fluid restriction : reduce the risk of ARDS.
- Tachypnea: increased insensible losses.
- Diuretics considered in worsening respiratory failure requiring CPAP or NIV, particularly if pulmonary edema on chest x-ray.
- Paracetamol is the first line antipyretic. Avoid ibuprofen .
- children should receive low flow nasal cannula (LFNC) oxygen if they are hypoxic, rather than high flow nasal cannula (HFNC).
- If children are hypoxic despite LFNC, then HFNC can be tried: not routinely be used as a method of reducing work of breathing in children who are otherwise saturating adequately

Corticosteroids

- **The RECOVERY trial in COVID-19 (+) adults revealed a reduction in 28-day mortality in those receiving invasive mechanical ventilation or oxygen in combination with dexamethasone.**
- **Dexamethasone should NOT be used in COVID-19 (+) patients who are Otherwise healthy and do not require respiratory support**

- *Dexamethasone should be considered in covid-19 (+) patients with respiratory support (oxygen or invasive mechanical ventilation)*

Corticosteroids (IV/PO)

- *Dexamethasone-Preferred*
- Alternatives:
  - Breastfeeding/Pregnant: Prednisolone or methylprednisolone
  - Preterm infant: Corrected GA < 40 weeks: Hydrocortisone

Should only be used in patients with:

a) Respiratory support: oxygen or invasive mechanical ventilation
b) Continuation for underlying condition requiring chronic steroid treatment
c) Additional diagnosis where steroid therapy is appropriate

Preferred Drug	Dose [33-34]
Dexamethasone	0.15mg/kg once daily (Max: 6 mg)
Alternative Drugs	**Dose [33-34]**
Prednisolone	1 mg/kg once daily (Max: 40 mg)
Methylprednisolone	0.8 mg/kg once daily (Max: 32 mg)
Hydrocortisone	0.5 mg/kg q12h X 7 days 0.5 mg/kg daily X 3 days

Duration: up to 10 days

Adverse events:

- Hypertension
- Hyperglycemia

- **Dexamethasone**

- **The best time for prescription**
- **<7 days from symptom onset , Optimal clinical timing: days 4–7 of symptoms**
  when ferritin > 500

Corticosteroid therapy can be considered in children with COVID-19 ARDS and for patients with fluid- and catecholamine-refractory septic shock.
If used, intravenous methylprednisolone is recommended with the following dose/schedule for ARDS and septic shock; modifications to weaning schedule can be considered based on clinical course.

	mg/kg/dose	Interval
Days 1-5	1	Every 12 hours
Days 6-10	0.5	
Days 11-12	0.25	
Days 13 -14	0.125	

- **CDC : Hypercoagulability and COVID-19**
- **increased risk for venous and arterial thrombosis of large and small vessels.**

- **thrombocytopenia**
- **Increased D-dimer levels**
- **Increased fibrin degradation products**
- **Prolonged prothrombin time**
- **pulmonary embolism**
- **Microvascular thrombosis of the toes**
- **Clotting of catheters**
- **Myocardial injury with ST-segment elevation**
- **Large vessel strokes**

Anticoagulation

- **prophylaxis or therapeutic anticoagulation should be considered unless contraindicated.**

Bleeding Risk Factors

- **Not Recommended**
- Intracranial hemorrhage
- Active bleed
- abnormal PT or APTT is not a contraindication.
- platelet count less than 25,000;
- monitoring advised in severe renal impairment
- If LMWH contraindicated due to renal failure (Creatinine Clearance <30mL/min), UFH can be used as an alternative.
- **consider with caution**
- Intracranial mass
- Lumbar puncture w/in 24 hours
- Coagulopathy
- Neurosurgical procedure w/in 24 hours

Absolute contraindications to anticoagulation	Intacranial hemorrhage Acute stroke/brain ischemia Ongoing and uncontrolled bleeding Uncorrected coagulopathy Incomplete spinal cord injury with suspected or known paraspinal hematoma Allergy to UFH or enoxaparin Platelet count < 50,000/mcl Epidural – discuss with anesthesia prior to initiating pharmacologic prophylaxis Patient is likely to require an invasive procedure within the next 24 hours Congenital bleeding disorder Uncontrolled severe hypertension Intracranial mass

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Clinical Situation	Recommendation	Notes / Considerations
All hospitalized patients	All patients should receive standard prophylactic anticoagulation with LMWH in the absence of any contraindications[8]	For pregnant patients >=20 weeks gestation, UFH is preferred to LMWH.

Venous thromboembolism (VTE) management in different COVID states.

Exposed (pre-symptomatic), Asymptomatic case, and mild phenotype: VTE prophylaxis not recommended.

moderate cases : thromboprophylaxis

For Any age: *If normal renal function and no contraindications	Chemoprophylaxis (Enoxaparin) . <2 mo: ◦ 0.75 mg/kg/dose SC q12 h . ≥ 2 mo: ◦ Wt<40 kg: ▪ 0.5 mg/kg/dose SC q12 h ◦ Wt ≥40 kg: ▪ 40 mg SC qd ▪ Titrate to Anti-Xa 0.2-0.4 units/mL

* If renal impairment (CrCl< 30mL/min) consider unfractionated heparin (UFH) †

Severe cases:

- **Switch to intensified dose thromboprophylaxis**
- **If D-dimer is >500 (5ng/ml) and Ferritin> 500 ng/ml and those with the worsening clinical situation.**

Table 2. Intensified dose thromboprophylaxis	

For Any age:
 	
***If normal renal function and no contraindications**
	Chemoprophylaxis (Enoxaparin)
	• **<2 mo:**
	  ◦ **1 mg/kg/dose SC q12 h**
	• **≥ 2 mo:**
	  ◦ **Wt<40 kg:**
	  . **0.75 mg/kg/dose SC q12 h**
	  ◦ **Wt ≥40 kg:**
	  . **40 mg q12 h**
	  . **Titrate to Anti-Xa 0.4-0.8 units/mL**

* If renal impairment (CrCl< 30mL/min) consider unfractionated heparin (UFH) †	

Critically ill cases:

•Start therapeutic dose anticoagulation if D-Dimer > 2500 ng/ml, Platelet count> 450 x10^9/L and CRP elevation>100 mg/dL.

Table 3. Therapeutic dose anticoagulation	
High-risk of VTE: -critically ill *Normal renal function and No contraindications	• Anticoagulation with therapeutic dose ◦ Consider Enoxaparin: ▪ <2 mo: 1.5 mg/kg/dose SC q12 h ▪ ≥ 2 mo: ▪ Wt<40 kg: ▪ 1 mg/kg/dose SC q12 h ▪ Wt ≥40 kg: ▪ 40 mg q12 h ◦ Titrate to Anti-Xa 0.6-1.1 units/mLTitrate to Anti-Xa 0.6-1.1 units/mL
* If renal impairment (CrCl< 30 mL/min) consider unfractionated heparin (UFH)†	

On Discharge:

- At least two weeks of prophylactic or therapeutic anticoagulation

Remdesivir

- an investigational antiviral drug originally developed to treat Ebola.
- works by inhibiting RNA-dependent RNA polymerase : inhibit COVID-19, MERS, and SARS in-vitro and in animal models.
- *approved by FDA*

- **CDC Guidelines** **OUTDATED**

- July 24, 2020
- **Remdesivir**
- **remdesivir be prioritized for use in hospitalized patients with COVID-19 who require supplemental oxygen but who are not on high-flow oxygen, noninvasive ventilation, mechanical ventilation, or ECMO .**
- using **remdesivir** for 5 days or until hospital discharge, whichever comes first

Update recommendation

Hospitalized and Requires Supplemental Oxygen **(but Does Not Require Oxygen Delivery Through a High-Flow Device, Noninvasive Ventilation, Invasive Mechanical Ventilation, or ECMO)**	**Remdesivir** 200 mg IV for one day, followed by remdesivir 100 mg IV once daily for 4 days or until hospital discharge, whichever comes first **(AI)**[b,c,d] *or* **Remdesivir** (dose and duration as above) plus **dexamethasone**[e] 6 mg IV or PO for up to 10 days or until hospital discharge, whichever comes first **(BIII)**[f] If **remdesivir** cannot be used, **dexamethasone**[e] may be used instead **(BIII)**

Remdesivir

Exclusion criteria
Evidence of multi-organ failure
Vasopressor requirement
ALT levels > 5 X ULN
CrCl <30 mL/min, dialysis or CVVH
Concomitant use of other antiviral

Remdesivir : in the first 4 days of admission

Remdesivir

Dosing & Duration	Comments
Adult dosing: • 200 mg load, then 100 mg q24h **Pediatric dosing*:** Weight / LD (once) / MD (q24h) <40 kg / 5 mg/kg / 2.5 mg/kg ≥40 kg / 200 mg / 100 mg LD-Loading Dose, Max =200 mg MD-Maintenance Dose, Max= 100 mg **Duration:** • 5-10 days	**Requires:** • Gilead's expanded access program required OR • FDA issued Emergency Use Authorization (EUA) As of 5/1/20, distributed to hospitals via Virginia Department of Health **Adverse events:** • Increased liver enzymes • Infusion related hypotension • Drug-drug interactions CYP450 • Avoid use with acetaminophen • QT prolongation (possible TdP Risk)

- Discontinue remdesivir if ALT ≥ 5 time ULN
- Discontinue remdesivir if eGRF < 30 mL/min/1.72m2

Adverse Events: generally well tolerated

- ALT/AST increase (onset 5-25 days, resolution 3-4 days)
- Infusion-related hypotension, Phlebitis
- Constipation , Dyspepsia, Nausea,
- Extremity pain, Headache, rare QT prolongation (possible Torsades de pointes risk)

- **Remdesivir therapy may be extended to up to 10 days if no substantial clinical improvement is seen at Day 5.**
- **The combination of remdesivir and dexamethasone has not been studied in clinical trials; however, there are theoretical reasons for combining these drugs.**

Favipiravir dosing is in patients ≥ 12 months of Age &body weight ≥10kg

Body weight	**Favipiravir 200 mg Tablet**
10-15 kg	**Loading Dose**: One tablet PO BID for One day Maintenance from Day2: Half tablet (100 mg) PO BID
16-21 kg	**Loading Dose:** Two tablets PO BID One day Maintenance fromDay2: One Tablet PO BID
22-35 kg	**Loading Dose:** 3 Tablets PO BID for One day Maintenance from Day2: One tablet PO TID
36-45 kg	**Loading Dose:** Four tablets PO BID for One day Maintenance from Day2: Two tablets PO BID
46-55 kg	**Loading Dose:** Five tablets PO BID for One day Maintenance from Day2: Two tablets qAM, thee Tablets qPM
For >55 kg	Can use adult dosing if age ≥16 years, if age <16years use dosing of 46-55 kg range

Treatment duration: 7 to 14 days

- **Tocilizumab** (IV)
- IL-6 inhibitor

Tocilizumab:

High risk of cytokine storm

OR

Rapidly worsening gas exchange

+

Pulmonary infiltrates

+

SpO2 ≤ 93% on RA or > 6 L/min

TOCILIZUMAB

Criteria for risk high-risk of cytokine storm[10]

≥1	Description
IL-6	≥3x upper normal limit
Ferritin	>300 ug/L with doubling in 24 hr
Ferritin + LDH	>600 ug/L at presentation >250
D-dimer	Elevated

Adult Dosing (≥18 years):

- 8 mg/kg X 1 (Max 800 mg)

Pediatric Dosing (<18 years):

- < 30 kg: 12 mg/kg X 1 (Max 800 mg)
- ≥ 30 kg: 8 mg/kg X 1 (Max 800 mg)

** Round dose to nearest full vial **

Duration: One dose
Consider additional dose 8-12 hours after if continued clinical decompensation

Contraindications:

- Avoid in pregnancy
- Breastfeeding

Caution:

- Treatment with >1 biologic is not recommended
- Avoid live viral vaccines
- Caution converting from tocilizumab (half-life~16 days) to anakinra
- CRP & IL-6 levels not reliable measurements of inflammation post tocilizumab

Serious adverse events:

- Gastrointestinal perforation, Anemia, Hepatitis, Infusion reaction

Typical response within 48-72 hrs with cessation of fevers and stabilized or improved oxygenation

* Interferon β

- **اینترفرون بتا- 1 بی (IFN β-1b)**، 250 میکروگرم بصورت تزریق زیرجلدی یک روز در میان به تعداد 5 - 7 دز
- **اینترفرون بتا- 1 ای (IFN β-1a)** ، 44میکروگرم بصورت تزریق زیر جلدی یک روز درمیان به تعداد 5 - 7 دز

توجه : در مورد استفاده از بتافرون در کودکان زیر 12 سال مطالعه به اندازه کافی وجود ندارد و اثربخشی و ایمنی آن دقیقا مشخص نیست.

One high quality RCT compared **lopinavir-ritonavir** with usual care in 199 adults hospitalised with SARS-CoV-2 infection, and found **no difference in the primary outcome** (time to clinical improvement) or mortality (secondary outcome), but did report that length of stay, ICU duration, and risk of complications were lower (secondary outcomes)

WHO

- **Data from Solidarity (including the French Discovery trial data) and the recently announced results from the UK's Recovery trial both showed that hydroxychloroquine does not result in the reduction of mortality of hospitalised COVID-19 patients, when compared with standard of care.**
- **There is currently no evidence to date that hydroxychloroquine should be use in mild disease, nor that it will reduce severe illness or mortality.**

Anakinra

For patients with evidence of sHLH-like features	With ID input, **anakinra** (Kineret) can be considered	

Antibiotics

- ***consider antibiotics*** if
- They are unusually ill at admission/day
- They are not showing improvement by day 3 (particularly fever and/or still in oxygen)
- If the cough is productive .

Routine empiric antibiotics are not recommended:

low rates of bacterial superinfection in COVID-19 patients
Unnecessary antibiotic use increases the risk of multi-drug resistant organisms and *C. difficile*

Does not favor antibiotics:	Favor empiric antibiotics:	Recommend:
COVID-19 confirmed / high likelihood	COVID-19 not yet established	Sputum GS & culture & Legionella urinary antigen
CXR: Peripheral / bilateral infiltrates	CXR: Lobar infiltrate	ceftriaxone 1 gm IV QD + doxycycline 100 mg PO BID
Baseline PCT < 0.2	Baseline PCT ≥ 0.2	(azithromycin is alternative to doxycycline)
Non-ICU admission	ICU admission	ICU/sepsis: consider MRSA / MDRO coverage

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- **CDC**
- **Mesenchymal Stem Cells**
- A new subsection on mesenchymal stem cells was added to Immune-Based Therapy in the Blood-Derived Products Under Evaluation for the Treatment of COVID-19 section. The Panel **recommends against** the use of **mesenchymal stem cells** for the treatment of COVID-19, except in a clinical trial **.**
- **Adjunctive Therapy: Vitamin C, Vitamin D, and Zinc Supplementation**
- Vitamin and mineral supplements have been promoted for the treatment and prevention of respiratory viral infections; however, their roles in treating COVID-19 are yet unproven.

تجویز IVIG:

در شرایط مثل HLH، نوزادان و شیرخواران بدحال و یا هایپوگاماگلوبولینمی (IgGکمتر از (mg/dl 400)توصیه میشود. هم چنین در صورت وجود شواهد دال بر TSS؛ Kawasaki Shock Syndromeو MIS-Cمصرف IVIGتوصیه می شود.

- بیماران بسیار بدحال:

در شرایطی که برای بیمار از پروتکل پیشنهادی کشوری استفاده شده و نتیجه بخش نبوده و جان بیمار درخطر باشد برای تصمیم گیری در مورد استفاده از درمان های خاص باید از نظرات یک تیم متشک ل از متخصصین عفونی، ریه و بیهوشی و سایر رشته ها حسب نیاز کمک گرفته شود و ممکن است داروها و روش های زیر کمک کننده باشد.

- High dose corticosteroids
- Hemoperfusion
- Cytosorb cytokine removal
- Plamapheresis

در هنگام ترخیص توصیه می شود تمام معیارهای زیر وجودداشته باشد :

1 . تب برای 24 تا 48 ساعت بدون دریافت تب بر قطع شده باشد.

2 . علایم تنفسی مثل سرفه در حال بهبودی باشد و علایم حیاتی پایدار باشد .

3 . اشباع اکسیژن (O2 sat)در هوای اطاق بالای 93 % بوده و یا در صورت پائین بودن آن سه روز پشت سر هم O2 satدر حد قابل قبولی ابقاء شده و افت پیدا نکند.

4 . نیاز به درمان داخل وریدی نباشد و بیمار تحمل خوراکی داشته باشد.

5 . آزمایش CBCقبل از تر خیص رو به طبیعی شدن باشد و در صورت در دسترس بودن CRP 50%و ESR 20%نسبت به قبل افت داشته باشد .

6 . در موارد شدیدی که گرافی درخواست می شود، در تصویربرداری Consolidation کاهش یافته و تعدادی از ضایعات ناپدید شده و ضایعه جدیدی ایجاد نشده باشد

7 . انجام RT- PCRجزء معیارهای پیش نیاز ترخیص نیست ولی در موارد زیر بسته به سیاست ها و شرایط جامعه و مرکز ممکن است درخواست شود :

- بیماران با نقص ایمنی
- بیمارانی که قرار است به بخش های دیگر و یا واحدهای Long term care facility(مثل شیرخوارگاه ها)منتقل شوند

National Institute Of Health Of America

Oct 9, 2020 NIH

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Figure 1. Recommendations for Pharmacologic Management of Patients with COVID-19 Based on Disease Severity

DISEASE SEVERITY	PANEL'S RECOMMENDATIONS *(Recommendations are listed in order of preference in each category below; however, all options are considered acceptable.)*
Not Hospitalized ***or*** **Hospitalized but Does Not Require Supplemental Oxygen**	No specific antiviral or immunomodulatory therapy recommended The Panel **recommends against** the use of **dexamethasone (AI)** See the Remdesivir section for a discussion of the data on using this drug in hospitalized patients with moderate COVID-19.[a]
Hospitalized and Requires Supplemental Oxygen **(but Does Not Require Oxygen Delivery Through a High-Flow Device, Noninvasive Ventilation, Invasive Mechanical Ventilation, or ECMO)**	**Remdesivir** 200 mg IV for one day, followed by remdesivir 100 mg IV once daily for 4 days or until hospital discharge, whichever comes first **(AI)**[b,c,d] ***or*** **Remdesivir** (dose and duration as above) plus **dexamethasone**[e] 6 mg IV or PO for up to 10 days or until hospital discharge, whichever comes first **(BIII)**[r] If **remdesivir** cannot be used, **dexamethasone**[e] may be used instead **(BIII)**
Hospitalized and Requires Oxygen Delivery Through a High-Flow Device or Noninvasive Ventilation	**Dexamethasone**[d] plus **remdesivir** at the doses and durations discussed above **(AIII)**[r] ***or*** **Dexamethasone**[d,e] at the dose and duration discussed above **(AI)**
Hospitalized and Requires Invasive Mechanical Ventilation or ECMO	**Dexamethasone**[d,e] at the dose and duration discussed above **(AI)** ***or*** **Dexamethasone**[e] plus **remdesivir** for patients who have recently been intubated at the doses and durations discussed above **(CIII)**[r]

Rating of Recommendations: A = Strong; B = Moderate; C = Optional
Rating of Evidence: I = One or more randomized trials with clinical outcomes and/or validated laboratory endpoints; II = One or more well-designed, nonrandomized trials or observational cohort studies; III = Expert opinion

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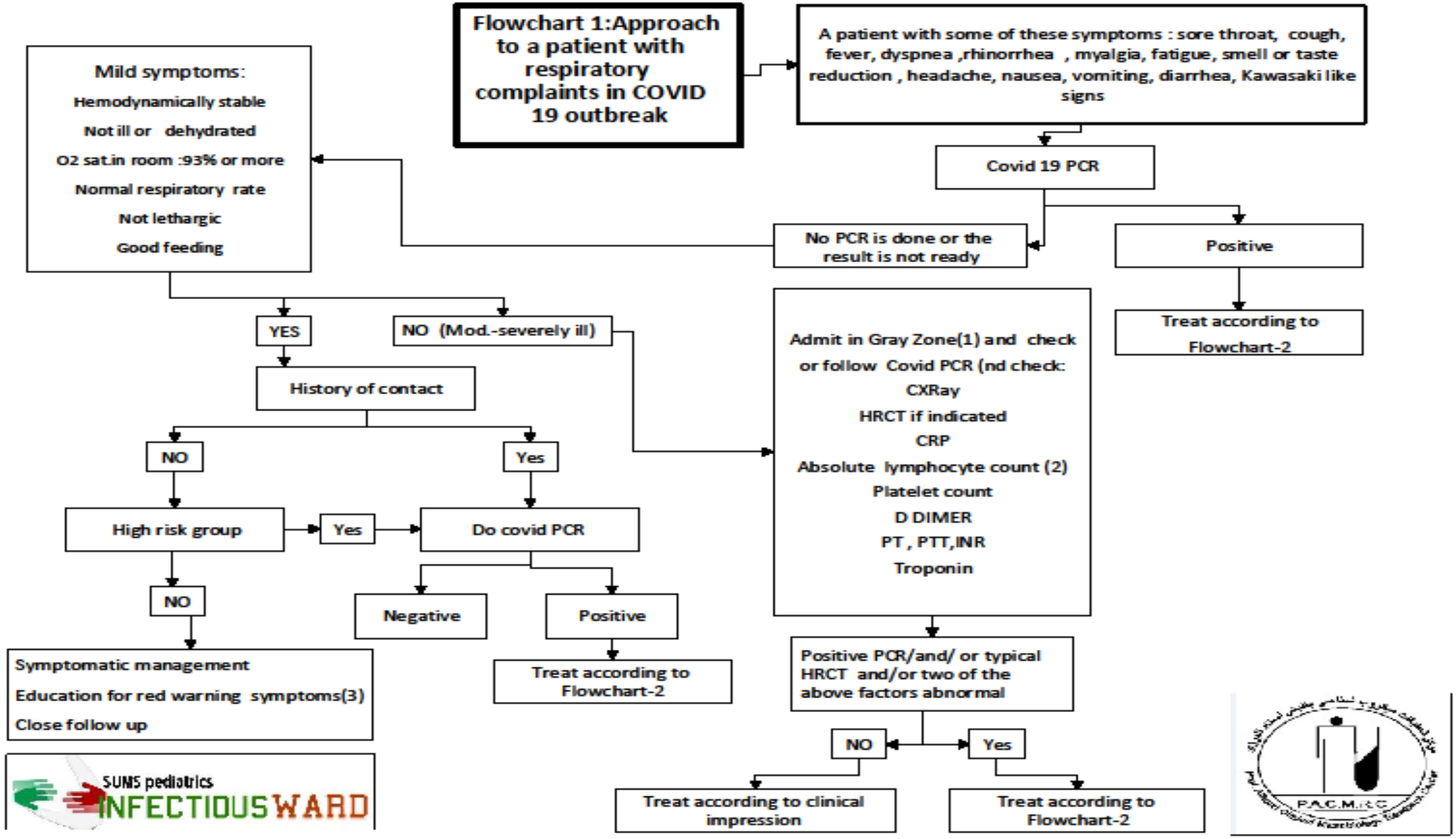
Flowchart 1:Approach to a patient with respiratory complaints in COVID 19 outbreak
A patient with some of these symptoms : sore throat, cough, fever, dyspnea ,rhinorrhea , myalgia, fatigue, smell or taste reduction , headache, nausea, vomiting, diarrhea, Kawasaki like signs
Covid 19 PCR
No PCR is done or the result is not ready
Positive
Treat according to Flowchart-2
Mild symptoms:
Hemodynamically stable
Not ill or dehydrated
O2 sat.in room :93% or more
Normal respiratory rate
Not lethargic
Good feeding
YES
NO (Mod.-severely ill)
History of contact
NO
Yes
High risk group
Yes
Do covid PCR
NO
Negative
Positive
Treat according to Flowchart-2
Symptomatic management
Education for red warning symptoms(3)
Close follow up
Admit in Gray Zone(1) and check or follow Covid PCR (nd check:
CXRay
HRCT if indicated
CRP
Absolute lymphocyte count (2)
Platelet count
D DIMER
PT , PTT,INR
Troponin
Positive PCR/and/ or typical HRCT and/or two of the above factors abnormal
NO
Yes
Treat according to clinical impression
Treat according to Flowchart-2
SUMS pediatrics
INFECTIOUS WARD
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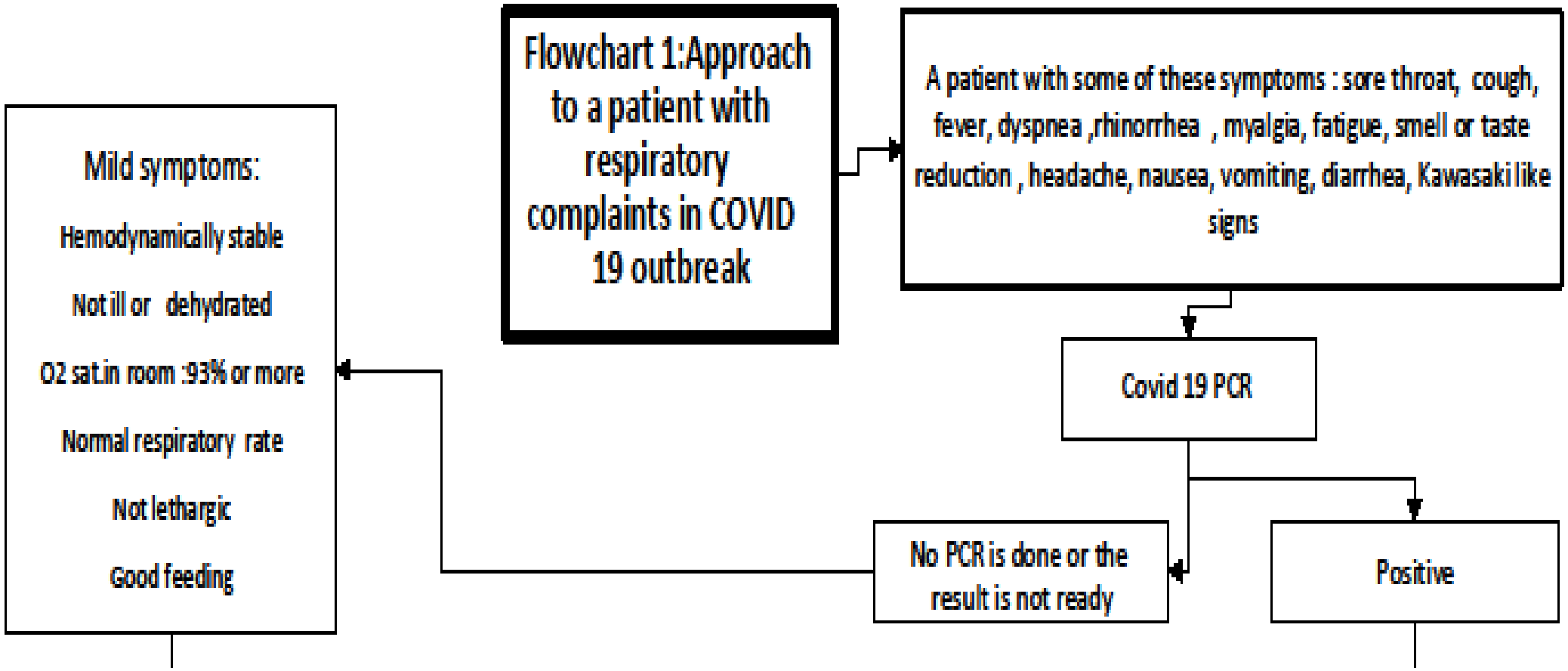
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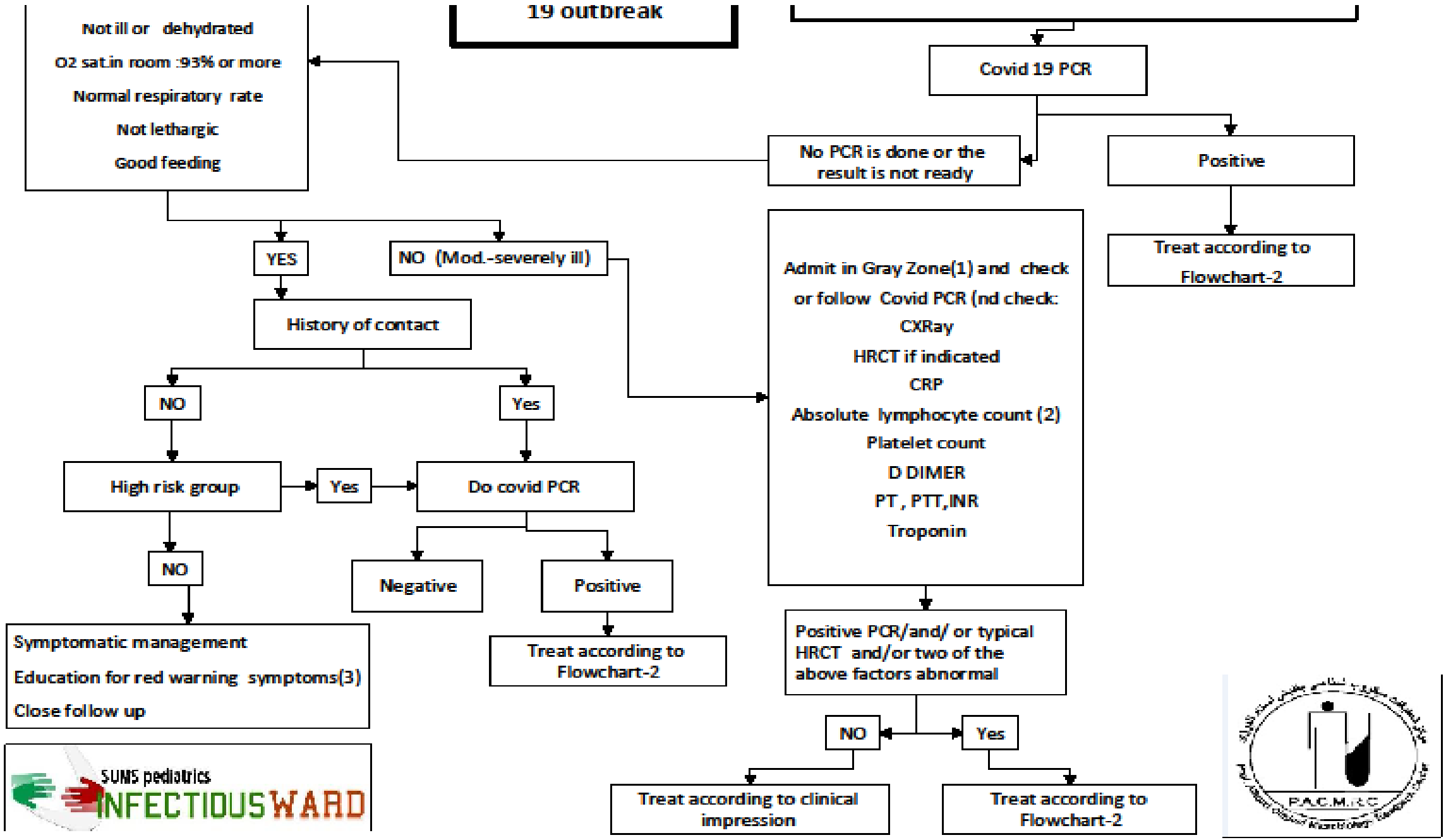
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P.A.C.M.I.C.C

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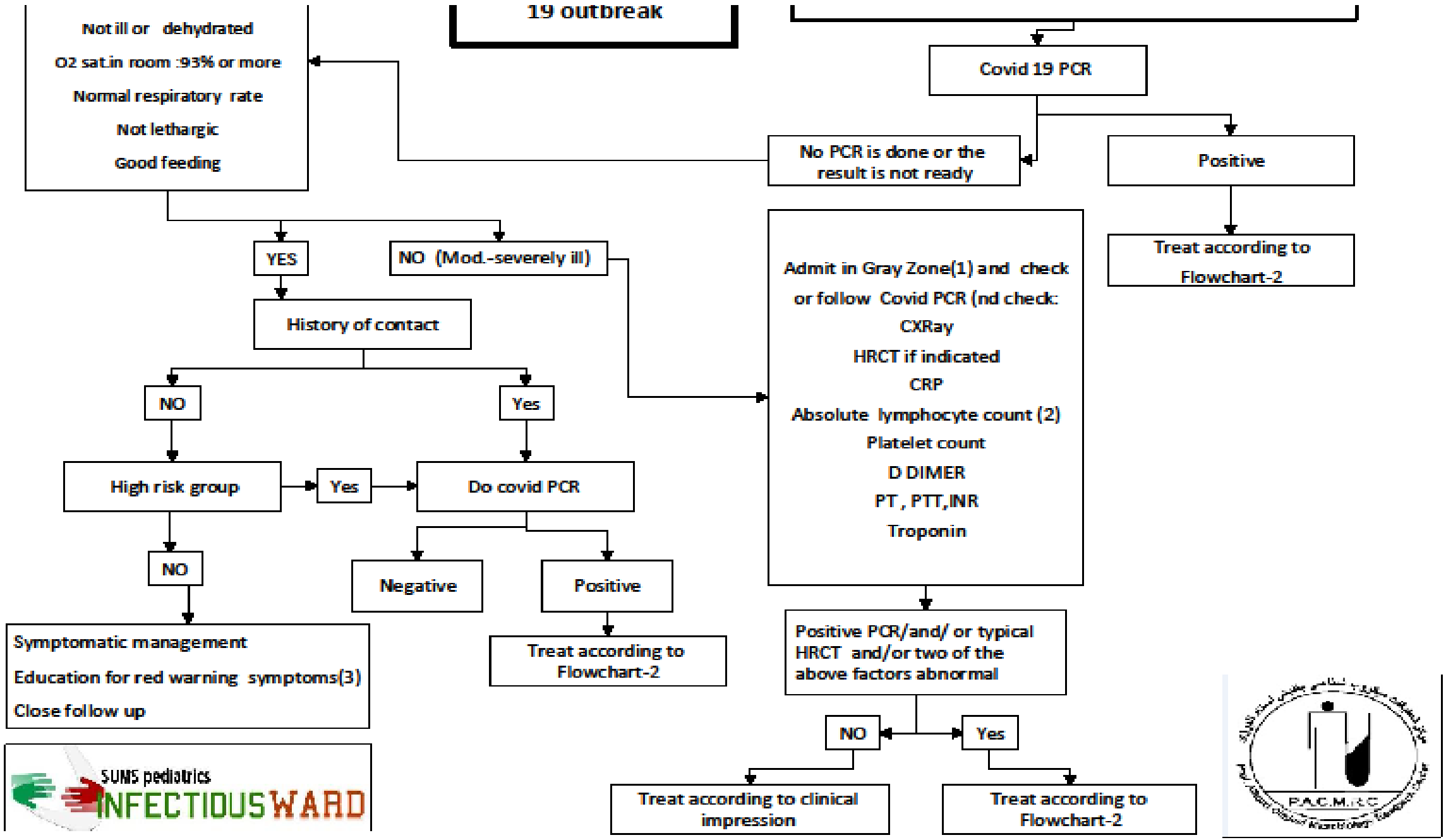

19 outbreak
Not ill or dehydrated
O2 sat.in room :93% or more
Normal respiratory rate
Not lethargic
Good feeding
Covid 19 PCR
No PCR is done or the result is not ready
Positive
Treat according to Flowchart-2
YES
NO (Mod.-severely ill)
History of contact
NO
Yes
High risk group
Yes
Do covid PCR
NO
Negative
Positive
Treat according to Flowchart-2
Symptomatic management
Education for red warning symptoms(3)
Close follow up
Admit in Gray Zone(1) and check or follow Covid PCR (nd check:
CXRay
HRCT if indicated
CRP
Absolute lymphocyte count (2)
Platelet count
D DIMER
PT , PTT,INR
Troponin
Positive PCR/and/ or typical HRCT and/or two of the above factors abnormal
NO
Yes
Treat according to clinical impression
Treat according to Flowchart-2
SUMS pediatrics
INFECTIOUS WARD
P.A.C.M.I.C.C

Flowchart 2: Approach to a patient with COVID 19 infection

P.A.C.M.R.C

SUMS pediatrics INFECTIOUS WARD

A patient with acute COVID-19 infection

History & physical exam. Initiate isolation precautions

Determine disease severity

Asymptomatic Exposed(pre-symptomatic)

Positive SARS-CoV-2 PCR without significant clinical signs and symptoms

Imaging is not recommended

No specific lab testing is recommended .
However, in those with underlying comorbidities, lab studies Should be individualized on case –by – case basis

Discharge from triage ,home-quarantine
Supportive care.
Assure hydration
If already prescribed continue NSAIDS, ACE- I and angiotensin Receptor blockers(ARBs), or steroids
Antivirals not recommended.
Anticoagulation not recommended.
Consider supplements(4)
Educate parents regarding warning symptoms(3)
Antibiotic therapy if indicated (5)

Mild

Fever, fatigue ,headache, nasal congestion ,sore throat cough, diarrhea, vomiting myalgia ,No respiratory distress. No O2 requirement (Spo2 ≥ 93%). Adequate hydration

Imaging is not recommended(6)

Moderate

Lower respiratory tract symptoms, including:
Tachypnea(7),fever. Inadequate hydration
No o2 requirement(Spo2 ≥ 93%)

CXR is recommended. Chest CT in Certain circumstances (8)

Initial labs (9)
CBC with differential
CRP; ESR; D dimer
PT / INR, PTT
Fibrinogen, LDH, Troponin
Procalcitonin (10)
Ferritin (11), VBG
Serum Lactate

Oxygen if needed
Antibiotic therapy if indicated.(5)
Consider Favipiravir(12)
Consider Remdesivir (13)
Anticoagulation therapy with Prophylactic dose (14)

Severe

Lower respiratory tract symptoms ,including: tachypnea. Spo2 ≤ 90% (without supplemental o2). Pao2/Fio2< 300mmHg. Need for supplemental oxygen via regular nasal cannula or high –flow nasal cannula

CXR and Chest CT is recommended.(8)

Initial labs (15)
CBC with differential, PT/ PTT , Fibrinogen, D dimer, CRP, ESR, Procalcitonin, LFT, LDH, Ferritin, Triglycerides , Troponin ,CKMB. If ferritin>500 mcg /ml: consider cytokine panel(IL-6, NK cell activity)

Antibiotic therapy if indicated (5)
Anticoagulation therapy (14)
Observe for signs of critical illness
Dexmethasone (16)
Remdesivir is a suggested (13)
Consider convalescent plasma (17)
Consider Immunomodulation (Tocilizumab)(18)

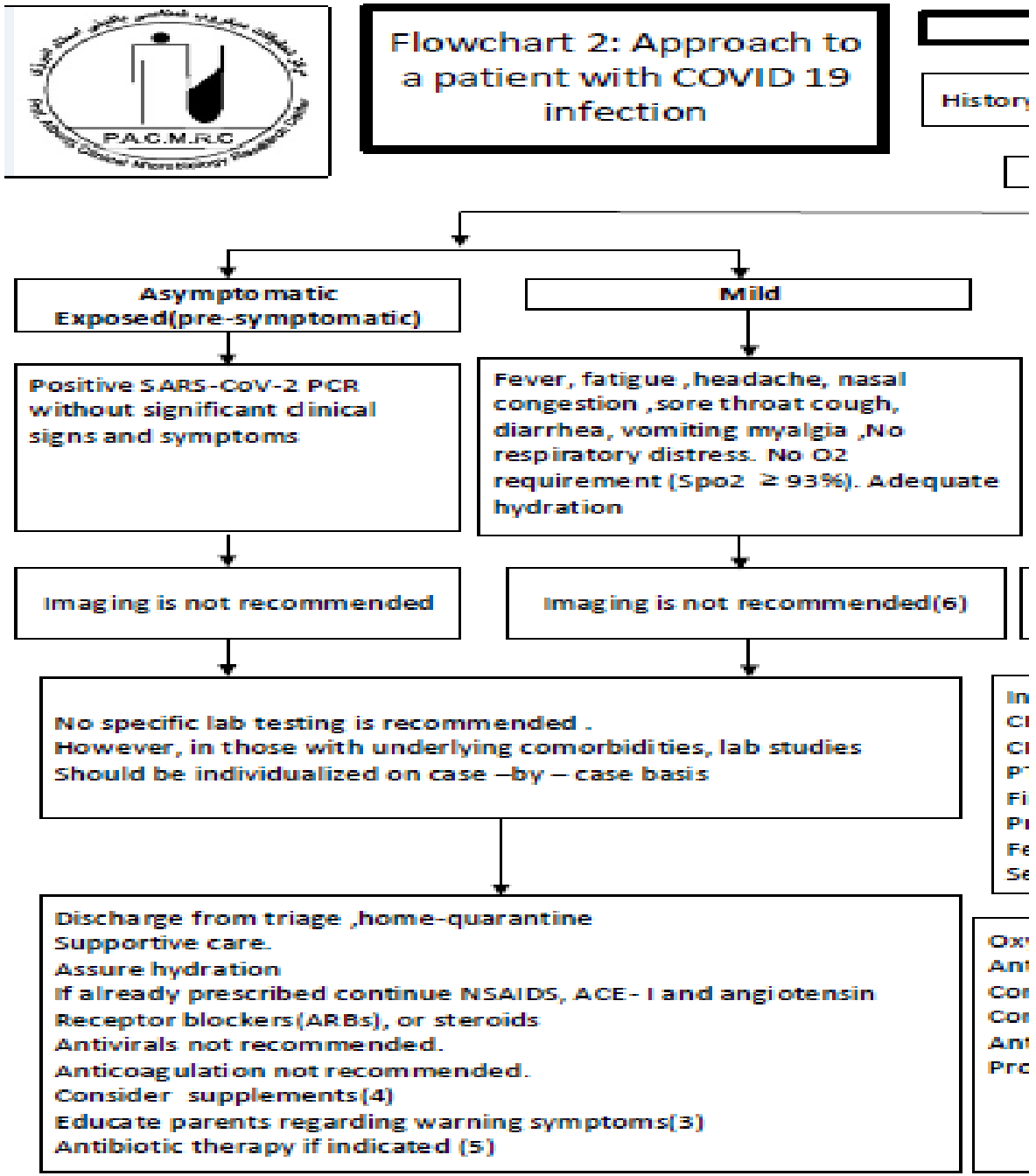
Critical

Lower respiratory tract symptoms, including :Tachypnea ,grunting ,with need for invasive or non-invasive mechanical ventilation
Acute Respiratory Distress Syndrome
Septic shock

Chest CT is recommended.(8)

Initial labs (19)
CBC with differential, PT/ PTT , Fibrinogen, D dimer, CRP, ESR, Procalcitonin, LFT, LDH, Ferritin ,Triglycerides ,Troponin, CKMB
If ferritin>500 mcg /ml: obtain Cytokine panel(IL-6, NK cell activity)

Admit to pediatrics intensive care unit(PICU)
Antibiotic therapy if indicated.(5)
Anticoagulation (14)
Consider Steroids(20)
Consider convalescent plasma (17)
Consider Immunomodulation (Tocilizumab) (18)
Consider interferon-beta (21)


P.A.C.M.R.C
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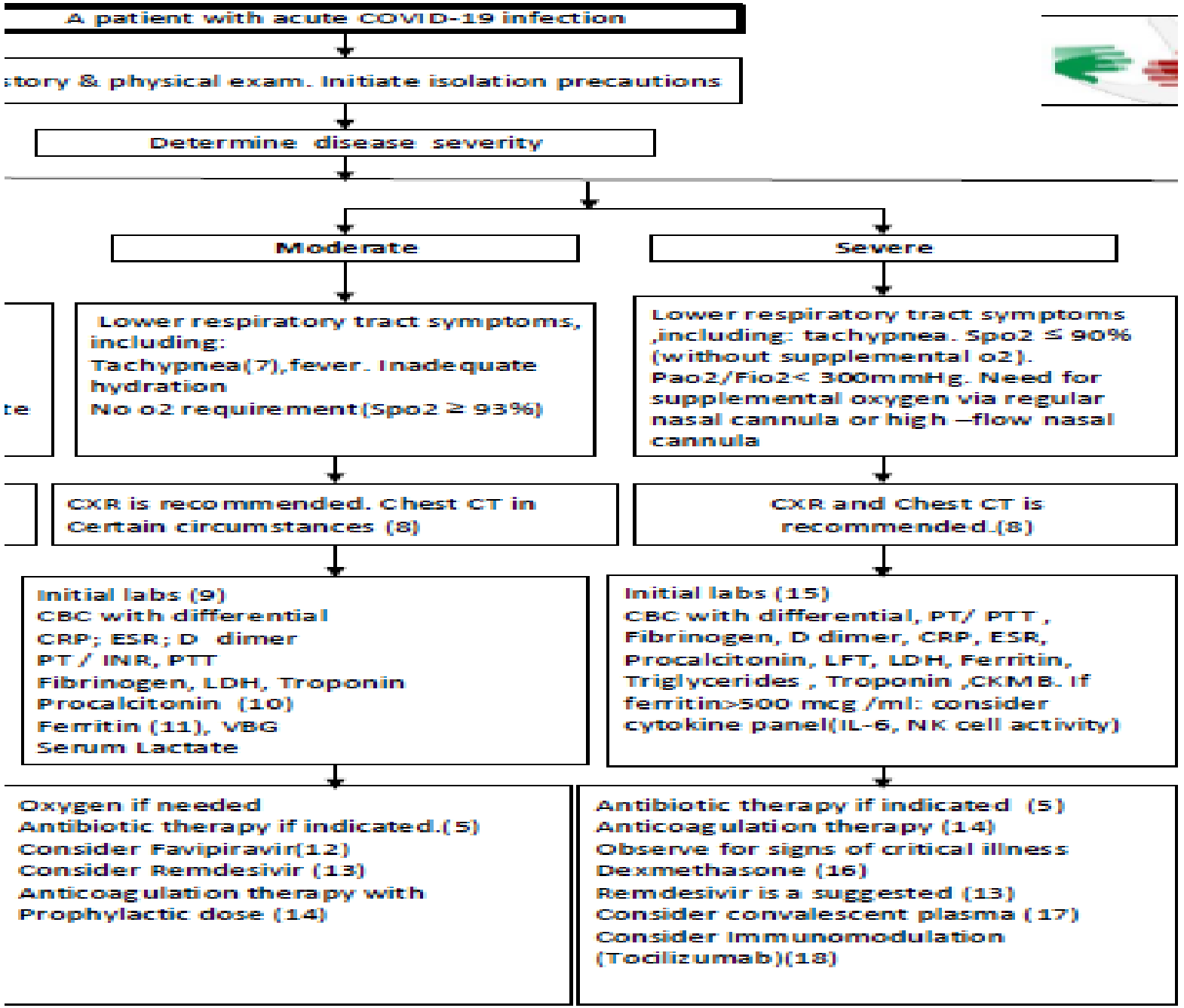
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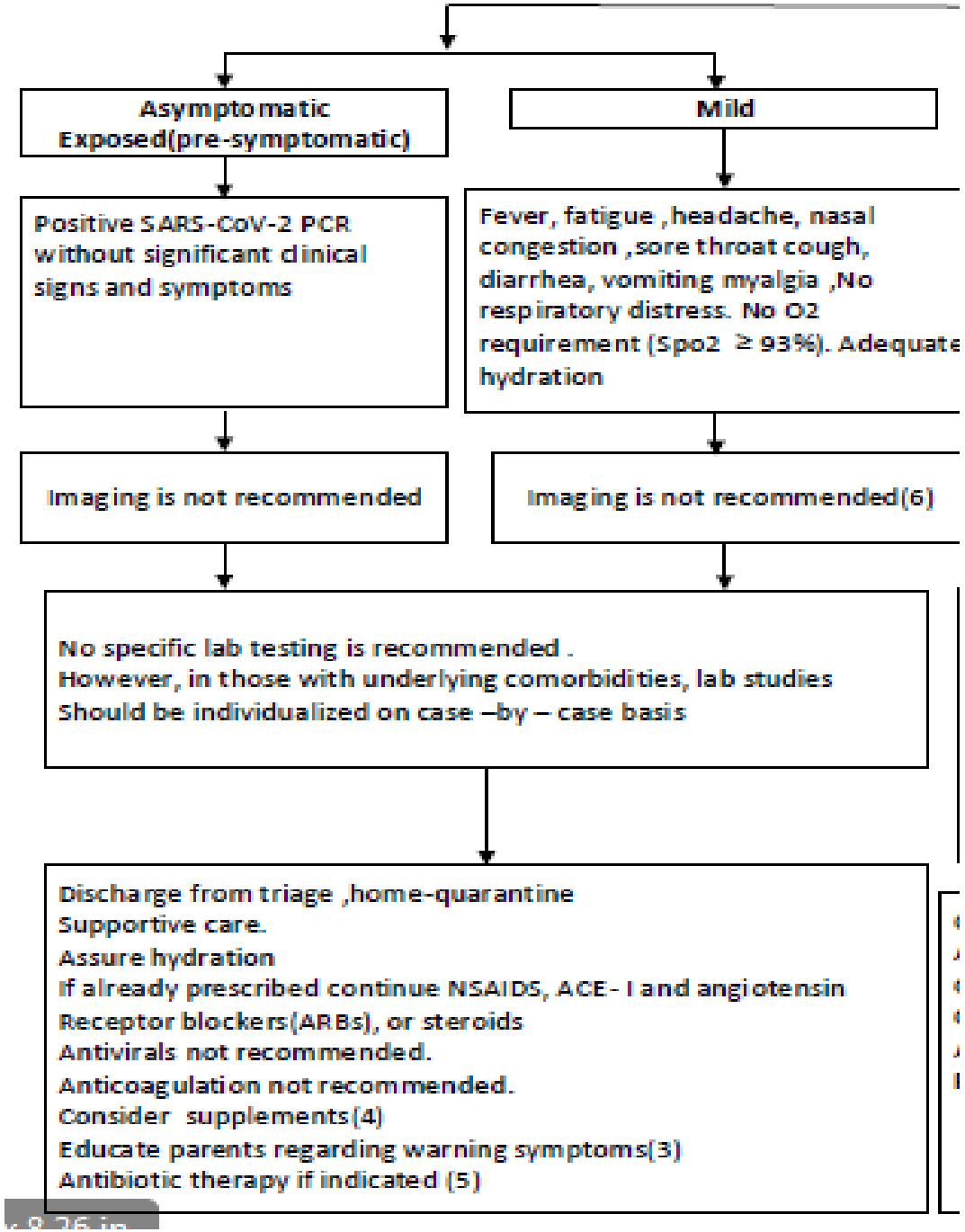
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D.Sanaei

Latest update on on treatment arms

Posted on 16 October 2020

The Solidarity Trial published interim results on 15 October 2020. It found that all 4 treatments evaluated (remdesivir, hydroxychloroquine, lopinavir/ritonavir and interferon) had little or no effect on overall mortality, initiation of ventilation and duration of hospital stay in hospitalized patients.

persons with COVID-19 should receive an inactivated influenza vaccine (BIII).

When Influenza Viruses and SARS-CoV-2 Are Cocirculating

Only testing can distinguish between severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and influenza virus infections and identify SARS-CoV-2 and influenza virus coinfection.

When SARS-CoV-2 and influenza viruses are cocirculating, the Panel recommends testing for both viruses in all hospitalized patients with acute respiratory illness (AIII).

When SARS-CoV-2 and influenza viruses are cocirculating, the Panel recommends influenza testing in outpatients with acute respiratory illness if the results will change clinical management of the patient (BIII).

Testing for other pathogens should be considered depending on clinical circumstances, especially in patients with influenza in whom bacterial superinfection is a well-recognized complication.

Antiviral Treatment of Influenza When Influenza Viruses and SARS-CoV-2 Are Cocirculating

The treatment of influenza is the same in all patients regardless of SARS-CoV-2 coinfection (AIII).

The Panel recommends that hospitalized patients be started on empiric treatment for influenza with oseltamivir as soon as possible without waiting for influenza testing results (AII).

Antiviral treatment of influenza can be stopped when influenza has been ruled out by nucleic acid detection assay in upper respiratory tract specimens for nonintubated patients and in both upper and lower respiratory tract specimens for intubated patients.