Government of Nepal
Ministry of Health and Population

Clinical Guidance for Management of COVID-19 Patients

Treatment for Mild COVID-19 Disease

Identification

Symptomatic patients meeting the case definition for COVID-19 without breathing difficulty or hypoxia

Recommendation

Home or institutional isolation to be decided by case to case basis depending on

- Clinical presentation,
- Requirement for supportive care,
- Potential risk factors for severe disease*, and
- Conditions at home, including the presence of vulnerable persons in the household

IPC measures

Medical mask, Physical distancing and Hand hygiene

Supportive Treatment

Antipyretics, Adequate nutrition and Hydration

Monitoring

Temperature and Oxygen saturation

***Risk factors for severe disease (preferably to be kept on observation in hospital)**

Age more than 60 years (increasing with age); underlying noncommunicable diseases (NCDs): diabetes, hypertension, cardiac disease, chronic lung disease, cerebrovascular disease, dementia, mental disorders, chronic kidney disease, immunosuppression, obesity and cancer; pregnancy, smoking

When to seek medical attention (adult)

Difficulty in breathing, light headedness, chest pain, dehydration, SpO2<94% or drop by $\geq$ 3% from baseline on exertion and in chronic hypoxemic patients

When to seek medical attention (Children)

Difficulty breathing/fast or shallow breathing (for infants: grunting, inability to breastfeed); blue lips or face; chest pain on pressure; new confusion; inability to awaken/not interacting when awake; inability to drink or keep down any liquids

Government of Nepal
Ministry of Health and Population

Clinical Guidance for Management of COVID-19 Patients

Treatment for Moderate COVID-19 Disease

Symptoms in adults

Fever, cough, dyspnea, respiratory rate >24 breaths (but <30)/minute and SpO2 90-93% on room air

Symptoms in Child

Cough/ difficulty in breathing PLUS

- Fast breathing AND/OR
- Chest indrawing
- No signs of Severe pneumonia
- SpO2> 90% on room air

Recommendation

- Admission to isolation ward
- Medical mask to the patient
- Adequate hydration and nutrition
- Antipyretics as required
- Target SpO2 92-94 %; 88-92% in patients with COPD; 94% in children
- Awake prone positioning in adult and older children (sequential position changing in every 2 hours)
- Vitals: Pulse, temperature, Respiratory rate, SpO2 4-6 hourly
- Prophylactic heparin (e.g. Enoxaparin 40 mg SC OD in adult) if no contraindication
- Antibiotics if bacterial infection is suspected

Laboratory investigations

CBC, RFT, blood glucose, LFT, CRP and CXR

Treatment for Severe COVID-19 Disease

Criteria of severe COVID-19

(Any of the following)

- Oxygen saturation < 90% on room air
- Respiratory rate >30 breaths/minute in adults and children > 5 years old; ≥ 60 breaths/min in children < 2 months old; ≥ 50 in children 2–11 months old; and ≥ 40 in children 1–5 years old;
- Signs of severe respiratory distress (accessory muscle use, inability to complete full sentences, and, in children, very severe chest wall indrawing, grunting, central cyanosis, or presence of any other general danger signs)

Government of Nepal
Ministry of Health and Population

Clinical Guidance for Management of COVID-19 Patients

Recommendation

- Admit in ICU or HDU
- **Respiratory support**
  - α. Oxygen supplementation: administration of supplemental oxygen therapy with
    - Target SpO2 ≥ 94% to any patient with emergency signs during resuscitation and in pediatric patient
    - Target > 90% to any patient without emergency signs and hypoxemia (i.e. stable hypoxemic patient)
    - Target SpO2 ≥ 92–95% in pregnant women
  - b. HFNC, NIV (if available) if target oxygen is not achieved or work of breathing is high
  - c. Awake prone positioning in adults and older children
  - d. Intubation and mechanical ventilation if HFNC or NIV failed or not tolerated
    - Use conventional **ARDSnet** protocol and prone positioning for ventilator management
- **Corticosteroids:**
  - 6 mg Dexamethasone intravenously daily for 10 days (or until hospital discharge whichever comes earlier) for adult and 150 micrograms/kg (as a base) orally, nasogastrically or intravenously once a day for 10 days (max 6 mg) in children or equivalent doses of hydrocortisone prednisolone.
  - Anticoagulation: Prophylactic LMWH 40-60 mg SC OD if no contraindications
  - Remdesivir may be considered ONLY in patients with moderate to severe disease (requiring oxygen supplementation but not on mechanical ventilation) and who are within 10 days of symptoms onset without renal or hepatic dysfunction
  - Dose: 200 mg on day 1 followed by 100 mg daily for 4 days for patients weighing > 40 kg and for 3.5-40 kg: 5 mg/kg on day 1 and 2.5 mg/kg once daily for 4 days
- Supportive measures
  - Monitoring of pulse, RR. SpO2 and BP
  - Maintain euvolemia
  - Broad spectrum antibiotics

Laboratory Parameters

CXR, CBC, RFT, LFT as indicated

Government of Nepal
Ministry of Health and Population

Clinical Guidance for Management of COVID-19 Patients

Treatment for Critical COVID-19 Disease

Identification

- ARDS; sepsis; septic shock OR
- Other conditions that would normally require the provision of life sustaining therapies such as mechanical ventilation (invasive or non-invasive) or vasopressor therapy

Management

- ARDS as per ARDSnet protocol with prone positioning
- Management of sepsis with broad spectrum antibiotics and hemodynamic monitoring
- Septic shock: fluid therapy and if required vasopressors, noradrenaline is preferred. Target MAP >65 mmHg
- Corticosteroids
- Thromboprophylaxis
- Routine care of intubated patients- oral care, nutrition, position change
- Monitor organ functions by SOFA score

Laboratory Parameters

CBC, RFT, LFT, lactate, CRP, CXR

Government of Nepal
Ministry of Health and Population

Clinical Guidance for Management of COVID-19 Patients

Management of Multisystem inflammatory syndrome in children and adolescents temporally related to COVID-19 (MIS-C)

Diagnostic criteria of MIS-C in Children

Children and adolescents 0–19 years of age with fever ≥ 3 days AND two of these:

- Rash or bilateral non-purulent conjunctivitis or muco-cutaneous inflammation signs (oral, hands or feet)
- Hypotension or shock
- Features of myocardial dysfunction, pericarditis, valvulitis, or coronary abnormalities (including ECHO findings or elevated Troponin/NTproBNP)
- Evidence of coagulopathy (by PT, PTT, elevated d-Dimers).
- Acute gastrointestinal problems (diarrhea, vomiting, or abdominal pain).

AND

- Elevated markers of inflammation such as ESR, C-reactive protein, or procalcitonin

AND

- No other obvious microbial cause of inflammation, including bacterial sepsis, staphylococcal or streptococcal shock syndromes

AND

- Evidence of COVID-19 (RT-PCR, antigen test or serology positive), or likely contact with patients with COVID-19

Investigations: *As listed above in criteria and investigations to rule out common differentials*

Treatment of MIS-C

A. Drugs to be when the child has cardiac dysfunction, shock, coronary involvement, multi organs dysfunction
    - Steroids: Methylprednisolone 1 to 2 mg/kg per day.
    - Intravenous Immunoglobulin 2 g/kg over 24 to 48 hours.
    - Antimicrobials
    - Appropriate supportive care, preferably in ICU
B. In absence of cardiac dysfunction, shock, coronary involvement, multi organs dysfunction, steroids (preferred) or IVIG