



Case definition – all cases should be tested for COVID 19, but this applies to whether COVID positive or not

- fever and cough and either
 - o increasing O2 demands; early ARDS
 - o cardiovascular instability and fluid bolus requirement; early signs of toxic shock
 - o Hyperinflammation (as indicated by CRP>100, Ferritin >850)
- Gastroenteritis with high fever
- Unusual neurological presentation with cardiorespiratory instability

EARLY MEDICAL MANAGEMENT

- **Call STRS and tertiary centre for discussion with *PIID/PICU/Rheumatology/Haematology/Cardiology* team**
- ABC management of any emergency presentation and transfer to intensive care if appropriate.
- Close cardiorespiratory monitoring
- Awareness of secondary infections and comorbidities managed promptly; look for atypical multisystem manifestations
- Consider early IVIg especially if features of toxic shock and typical or atypical Kawasaki Disease
- Discuss need for antiviral treatment with tertiary centre

Key investigations

- **COVID screen** (*ensure* deep throat and nasal swab, ?rectal swabs etc)
- **FBC, U+E, LFT, CRP, Troponin, Ferritin, LDH, Coag panel, including D-Dimer, Triglycerides**
- **Blood cultures, urine MC+S, RVP**
- **ECHO and CXR**
- **SERUM SAVE** (in case IVIg given)
- **Consider other infection work up**

TREATMENT

Mild to moderate disease- no O2 req, mild URTI-**supportive care**

- Monitor as described

Deteriorating or severe disease

- See monitoring guidelines
- Consider early IVIg for toxic shock or features of typical or atypical KD
- Discuss antiviral remdesivir **with tertiary centre PIID**
- Treatment with immunomodulatory therapy **may be** considered if evidence of **hyperinflammation** (CRP > 100, ferritin >854, or high risk on H-score calculator (<http://saintantoine.aphp.fr/score/>))

Critical Disease- immediate transfer

- If established ARDS (O2 index ≥ 16 ; O2 saturation index ≥ 12.3)
- Toxic shock defined by
- Altered consciousness or Multiorgan failure
- Consider pretransfer IVIg

MONITORING (irrespective of presenting features)

Respiratory function

- PEWS; hourly resp rate, FiO2, SaO2
- Call when ...

Cardiovascular monitoring

- PEWS
- Call when Eg giving a fluid bolus

Hyperinflammation

- persistent fever despite ABs & assoc with transaminitis/cytopenia
- Cardio respiratory deterioration / treatment escalation
- Hepatosplenomegaly and lymphadenopathy
- Haemorrhage or spontaneous bruising
- Multi-organ involvement including neurologic dysfunction
- High H-score (<http://saintantoine.aphp.fr/score/>)

Daily lab blood tests

- Low or rapidly falling Hb, WCC, platelets
- High ferritin (>854)
- Unexpected low or falling ESR (not reassuring)
- Low or falling or unexpected normal fibrinogen
- Rising AST, ALT, LDH
- Rising triglycerides
- Low serum sodium with worsening renal function

Neurological assessment

- Irritability
- Unusual movements; loss of tone

TRAPS

- **Inadequate testing for COVID in suspected case**
- **Inadequate monitoring of cardiorespiratory status**
- **Ignoring gastrointestinal presentation and neurological instability**
- **Failure to call STRS / tertiary PIID & PICU for early specific COVID management including antiviral and immunomodulation**

Further Management

- Antiviral Remdesivir (give criteria for use including must be anticipating COVID positive)
- Hyperinflammation
 - o Intensification is on a case by case basis with repeat IVIg, IV methylprednisolone, anakinra, tocilizumab or infliximab
 - o Dependent on features of Kawasaki Disease and HLH2/MAS
 - o See monitoring
 - o Dosing as per tertiary centre and patient or
 - Anakinra 4-8mg/kg per day in two divided doses (step up initial dose after day 1 if insufficient response)
 - Tocilizumab 8mg/kg/day (if >30kg BW) or 12mg/kg/d (if <30kg BW) for 2 days
 - Methylprednisolone 10-30mg/kg per day for 3 days
 - Infliximab 5mg/kg for one dose if refractory inflammation and high likelihood of KD

References: to add
(ARDS as defined by PARD criteria:pediatric acute lung consensus group)

- **Refer to Pharmacy COVID antiviral and immunomodulatory guidelines for doses and info**