Background:
A novel coronavirus named currently SARS-CoV-2 of a zoonotic origin has emerged and the infection called Coronavirus Diseases 2019 (COVID-19) started spreading worldwide. Incubation period: the time from exposure to symptom development is between 2-14 days. Avoiding exposure by adhering to recommended hygiene procedures, isolation of SARS-CoV-2 infected persons and social distancing are the only prevention strategies. There are no approved treatment options and there is no available vaccine. Tocilizumab has been used in China for therapy of severe cases with evidence of response.

Data from China and Italy suggests that children have a milder form of the disease than adults, although we do not understand why this is the case. Only 2 in every 100 diagnosed cases of coronavirus in China have been in children and young people aged <18 years. The Italian experience in Milan and Turin (Prof Nica Capellini and Professor Antonio Piga) is that there has been limited impact in patients with thalassemia, as a model of a transfusion dependent anaemia in a high-risk area. Similarly, the Monza haematology, oncology and BMT paediatric service (Professor Adrianna Balduzzi) has seen limited impact in children with serious haematological disorders. However, the following may indicate a higher risk in DBA:

- approximately a third of patients with DBA are known to have impairment of cellular and/or humoral immunity.
- the experience of bone marrow transplantation and chemotherapy use for malignancies in this population is that patients suffer a greater degree of toxicity and myelosuppression than those receiving identical treatment.
- approximately a third of the patients with DBA are on steroids.
- there is a risk of adrenal insufficiency.
- patients and parents may have concerns/anxiety about undertaking ionising radiation containing radiological investigations because of the increase risk of cancer in DBA.

PROCEDURE

General Guidance
- Follow NHS advice on https://www.nhs.uk/conditions/coronavirus-covid-19/
- DBA patients should:
  - avoid close contact with people who have symptoms of coronavirus
  - refrain from non-essential travel and only travel on public transport if you need to,
  - work from home, if possible.
  - avoid social activities, such as going to pubs, restaurants, theatres and cinemas
  - avoid events with large groups of people
- Discuss with lead medical provided possibility of remote consultations and postponement of routine monitoring tests and clinical consultations that are not essential.
• Patients to let their specialist teams know if they have symptoms or have to self-isolate or, if they are admitted to hospital.
• Delay steroid trials until resolution of COVID-19 and remain on transfusion programme.
• Delay planned BMT admission unless for MDS/AML or aplastic transformation, in which case assessment of risk:benefit ration needs to be applied.
• Post-BMT patients on immunosuppression or within the first 6 months post-cessation of immunosuppression or with chronic GvHD or on IVIG replacement: follow the guidance of their BMT Programme.

Social Distancing Measures:

Stringent Social Distancing Measures are advised for patients who are either:
• on steroids as follows:
  o children: prednisolone (or equivalent) ≥0.5 mg/kg on alternate days or ≥0.25 mg/kg daily
  o adults: prednisolone (or equivalent) ≥30 mg on alternate days or ≥15 mg per day
• have an associated cellular or humoral immunodeficiency.

These patients should have arrangements in place to avoid attendance to nursery/school/university and adults should work from home. They should significantly limit your face-to-face interaction with friends and family if possible. Other patients should follow current NHS-E advice regarding nursery/school/university attendance.

DBA Treatment:
No changes to usual patient treatment are required, but avoid initiating new therapies unless essential.
• Patients on regular transfusions to remain on the same regimen. NHSBT are working to maintain the blood supply and will update clinical teams if problems develop. If that were to be the case, there may be a need to lower the transfusion threshold from current recommendation of Hb ≥90 g/L to ≥80 g/L in the first instance. Routine monitoring for iron overload and for the effects of iron chelation should be continued. For patients on regular transfusions, outpatient review should be co-ordinated to take place at the same time as transfusion. Clinicians should consider if routine MRI monitoring for iron overload can be postponed. If a fever develops, all chelation agents should be stopped.
• Patients on steroid treatment should remain on the same steroid regimen.
• Patients in haematological remission do not require additional monitoring.

Management of patients with respiratory symptoms fulfilling criteria:
A. Any patient with upper or lower respiratory symptoms: send PCR testing for SARS-CoV-2 in addition to other respiratory virus PCR testing from any respiratory sample obtained.
B. Patients positive for SARS-CoV-2 in an upper respiratory tract sample without lower respiratory clinical symptoms should have a CXR. A bronchoalveolar lavage
(BAL) is not recommended given risk of transmission amongst health care workers, unless a co-infection is suspected.

C. **Patients positive for SARS-CoV-2 in an upper respiratory tract sample with lower respiratory clinical symptoms of lower respiratory tract infection** (shortness of breath, hypoxia, tachypnoea) should have a CXR. If no radiological signs, then proceed to MRI chest in preference or alternatively to a HRCT. A bronchoalveolar lavage (BAL) is not recommended given risk of transmission amongst health care workers, unless a co-infection is suspected.

D. **Patients without SARS-CoV-2 detected in the upper respiratory tract but with clinical symptoms of lower respiratory tract infection** (shortness of breath, hypoxia, tachypnoea), need to have a CXR and if no radiological signs an MRI chest or if not possible a High Resolution CT chest to evaluate for lower respiratory tract infection should be considered. Preliminary reports suggest the possibility of discrepancy between upper and lower tract specimen positivity. If chest imaging is abnormal and in patients for whom it is clinically indicated a bronchoalveolar lavage (BAL) should be considered if safe and tested for SARS-CoV-2 or the possibility of COVID-19 considered.

E. **Co-pathogens should be evaluated and treated.**

F. Assess for possibility of adrenal insufficiency and if known adrenal insufficiency institute hydrocortisone replacement therapy.

In case of diagnosis of COVID-19:

- **Patients with no or only upper respiratory symptoms and a normal CXR**, no therapy is recommended and remote supervision is required and likely to be sufficient.

- **Patients with lower respiratory tract symptoms**, direct clinical supervision is required (hospitalisation if possible) and the possibilities of participation in a clinical trial is recommended.

Stop all chelation treatment (febrile or acute unwell patients have risk of AKI with both deferasirox and deferiprone, risk of severe tubular acidosis with deferasirox, risk of hyperammonaemic encephalopathy with deferasirox and risk of neutropenia in patients on deferiprone).

There are concerns surrounding NSAIDs in COVID-19 and until these are clarified, the use of paracetamol should be preferred unless there is a contraindication.

References:


the accuracy of different respiratory specimens in the laboratory diagnosis and monitoring the viral shedding of 2019-nCoV infections2020;2020.02.11.20021493. doi: 10.1101/2020.02.1