

COVID-19

in

Nephrology

**Recommendations of
the Senegalese
Nephrology Society
(SENEPHSO)**

CONTEXT

The world is currently facing a pandemic due to SARS-CoV-2 (COVID 19) marked by a significant mortality, especially in immunocompromised patients including those with chronic kidney disease (CKD). Prevention remains the cornerstone of care in the absence of validated curative treatment. A monitoring strategy has been implemented under the coordination of the World Health Organization and state authorities in Senegal.

The incidence of coronavirus disease 2019 in our country remains worrying with community transmission.

Our goal is to offer recommendations and protocols aimed at patients, the medical community and the authorities for the management of patients suffering from CKD in this context of pandemic due to SARS-CoV-2

SUMMARY

- I. GENERAL PREVENTIVE MEASURES
- II. RECOMMENDATIONS FOR CHRONIC KIDNEY DISEASE
- III. RECOMMENDATIONS FOR DIALYSIS
- IV. RECOMMENDATIONS FOR RENAL TRANSPLANTATION
- V. RECOMMENDATIONS FOR COVID-19 RELATED ACUTE KIDNEY INJURY
- VI. RECOMMENDATIONS TO THE AUTHORITIES
- VII. APPENDICES

I. GENERAL PREVENTION MEASURES

I.1 For patients

- **Hygiene**

- Regular handwashing with soap and water for at least 30 seconds or using a hydroalcoholic solution several times a day, after each contact and after sneezing;
- Greeting without handshaking or kissing;
- Avoid sharing personal effects (cutlery, sheets, clothes, etc.);
- Have a personal thermometer and bring it to the dialysis center;
- Respect the social distancing, of at least 1 meter between individuals.

- **Displacement**

- Avoid gathering places: baptisms, weddings, places of worship (mosques, churches, temples), markets, religious events (Gamou, Magal, Ziarra, Wazzifa, Khadra, Kourel, collective prayers, etc.);
- Avoid visits from relatives and friends;
- Avoid all unnecessary professional and private meetings;
- Favor individual transports;
- Wear a face mask to protect yourself in the means of transport;
- Only go to the hospital after consulting the treating doctor.

- **Upon arrival at the dialysis center**

- Wash your hands with soapy water before entering the dialysis center;
- Rub your hands with a hydroalcoholic solution as soon as you access the dialysis center;
- Greet people without shaking hands or kissing;
- Avoid grouping patients before the start of dialysis;
- Respect social distancing, of at least 1 meter between patients;
- Do not touch anything (not even the generator) once in the room;

- Sit directly on the bed

- Do not share any personal object (cutlery, sheets, etc.);
- Avoid unnecessary movements and stay in bed throughout the session;
- Avoid unnecessary discussions during the dialysis session;
- Wash your hands once the session is over and leave the room immediately after weighing without touching the scale;
- Do not use the mobile phone except in case of emergency;
- Return home taking the same precautions as on arrival.

- Other precautions
 - Monitor the patient's health condition and that of those around him: report any appearance of symptoms (malaise, fatigue, fever, cough, breathing difficulty ...) to the contact person of the hemodialysis center;
 - Provide a sufficient supply of essential drugs for 3 months;
 - Avoid rumors and get in touch with the medical staff for any essential health information;
 - Avoid self-medication (Ibuprofen and other anti-inflammatory drugs) and herbal medicine;
 - Protective equipment: have a sufficient supply of protective equipment (mask, gloves and hydroalcoholic solution in a small bottle or liquid soap

I.2 For the medical team

- Always wash your hands with soapy water before entering the dialysis center;
- Surgically wash hands upon arrival at the service;
- Put on a disposable overcoat every day;
- Always wear surgical masks in treatment rooms;
- Wear examination gloves during the handling of the dialysis machine, water treatment, scales, tensiometer and stethoscope;
- Wash your hands systematically or rub them in hydroalcoholic gel after each manipulation;

- Rub hands with hydroalcoholic gel on hands each time gloves are removed;
- Systematically take the temperature of all patients as soon as they enter the center;
- Disinfect patient beds before installing them;
- Check if the patients have respected the hygiene measures (hand washing and wearing surgical mask);
- Prohibit access to the room to anyone outside the service;
- Prohibit patients from touching any object in the center (generators, scales, etc.) Limit access to the patient's baggage in the center;
- Assure the hygiene of the room and the environment (use a detergent or "bleach" on floors, surfaces, door and window handles);
- Perform a rigorous external disinfection of the generators;
- Avoid sharing personal items (cutlery, sheets, etc.)
- Monitor patients health condition and that of those around them: report any appearance of symptoms (malaise, fatigue, fever, cough, breathing difficulty ...) to the doctor and / or SAMU;
- Sanitize your hands before and after each gesture;
- Regularly disinfect telephones.

II.RECOMMENDATIONS FOR CHRONIC KIDNEY DISEASE

- **If the patient is not suspected of COVID-19**

- Prioritize remote health monitoring for this high-risk patient;
- Maintain the treatment according to the previously defined pattern.

- **If the patient is in contact or suspected of COVID-19**

- Inform the treating nephrologist and the warning cell;
- Put in quarantine while waiting;
- Maintain treatment according to the pattern previously defined.

NB: The signs of COVID-19 can be soft.

- **If the patient is COVID-19 positive**

- Inform the treating nephrologist;
- Continue the ACEI / ARB; but the usual recommendations for interruption, excluding COVID-19, remain valid (acute kidney injury, dehydration, diarrhea, hypovolemia,...);
- Continue the corticosteroids according to the established protocol;
- Maintain the immunosuppressive treatment according to the established protocol;
- Initiate a “specific” treatment in collaboration with the treatment center for epidemics (CTEPI)

III.RECOMMENDATIONS FOR DIALYSIS

III.1 Protocol for the management of a CoVID-19 case in chronic hemodialysis patients

III.1.1 Definition of cases (see official definitions)

- ❖ **Contact case:** any patient who has been in contact with a suspected or confirmed case.
- ❖ **Suspicious case:** any symptomatic dialysis patient (fever, body aches, fatigue, respiratory signs) without any other obvious cause that could explain the symptoms, with or without notion of contact.
- ❖ **Confirmed case:** any patient tested COVID-19 positive whatever the signs and clinical symptoms.

- **Survey**

Collect information about travel, contacts and other risk factors for patients and dialysis staff.

- **Patient identified as “contact case”**

- Inform the patient, his family, the medical staff, hospital authorities and if necessary the warning cell;
- Systematically isolate and screen the patient: see Figure 1;
- ❖ Pending the results:
 - Systematically take the temperature before and after each hemodialysis session;
 - Systematically disinfect the contact area after each session;

- Actively monitor the appearance of fever and respiratory signs;
 - Reinforce general measures (see recommendations for patients and staff) ;
 - Contact the treating nephrologist if fever or symptoms occur;
 - Hemodialysis in the center after 14 days of isolation without fever or symptoms.
- **Patient identified as a “suspected case”:**
 - Inform the patient, his family, the medical staff, hospital authorities and if necessary the warning cell;
 - Systematically isolate and screen the patient: see Figure 2;
 - ❖ Pending the results
 - Put in place additional measures:
 - Personal protective equipment (PPE) (FFP2 mask, glasses, and overcoat, etc.) for the staff;
 - Hemodialysis in an isolation room or sessions brought back to the last connection or at best hemodialysis after disconnection of all patients except emergency;
 - Surgical mask for the patient;
 - Perform the hemodialysis session in the presence of two nurses and a nephrologist;
 - Disinfect the hemodialysis room and manage waste according to the procedures of the health authorities;
 - Evaluate the clinical condition and confine the patient in collaboration with the health authorities;
 - Strengthen general measures by collaboration with authorities.
 - **Patient identified as “confirmed case”** (see Figure 2)
 - Inform the patient, his family and the nursing staff;
 - Hospitalize the patient in collaboration with the authorities;
 - Hemodialysis in a dedicated center; mandatory full PPE wearing before taking care of a patient in the dedicated center;
 - The center dedicated to hemodialysis of COVID-19 patients must be adapted. Required resources are:
 - Trained staff for the care of COVID-19 patients;

- At least 1 nephrologist, 2 senior nephrology technicians for 2 patients on dialysis. If the patient is on an artificial respirator, the presence of a resuscitator is recommended;
 - A dressing room for the health personnel who have to take care of the patient;
 - A contaminated red zone and an uncontaminated green zone well delimited and known by the agents participating in the care of patients (nephrologists, resuscitators, senior technicians of nephrology, hygienists);
- Access to the center strictly reserved for the medical and paramedical staff responsible for the dialysis of the case;
 - Disinfect the hemodialysis room and manage waste according to MSAS procedures;
 - Formally prohibit the movement of patients between centers;
 - Identify *contact patients* and systematically screen for suspected cases;
 - Maintain additional measures (see suspect case) at least 20 days;
 - Make regular clinical evaluation and monitoring;
 - Reinforce general measures in collaboration with the COUS.

III.2.2 Protocol for the management of a CoVID-19 case in peritoneal dialysis patients

Case definition (see above)

- **Patient identified as “contact case”:**
 - Inform the patient, his family, the medical staff and hospital authorities;
 - Stop coming to the hospital and stay in contact by phone with the PD staff;
 - Deliver PD supplies to the family;
 - Stay confined in the room where exchanges take place for at least 20 days;
 - Continue the usual exchanges and treatment;
 - Take the temperature on a regular basis;
 - Actively monitor the appearance of respiratory signs;
 - Reinforce general measures (see recommendations for patients and staff);
 - Contact the treating nephrologist if fever or other symptoms.

- **Patient identified as a “suspected case”:**
 - Inform the patient, his family, the nursing staff and the hospital authorities;
 - Isolate in an individual cabin and systematically screen the patient: see Figure 3;

❖ Pending the results

- Continue exchanges and usual treatment;
- Strengthen general measures in collaboration with the authorities.
- **Patient identified as “confirmed case” (see Figure 3)**

- Inform the patient, his family, the nursing staff;
- Hospitalize the patient in collaboration with authorities in an individual cabin;
- Perform dialysis on automated peritoneal dialysis mode;
- Systematically disinfect the cyclor at the end of each session;
- Continue the usual treatment;
- Transfer to an intensive care unit with peritoneal dialysis on site if confirmed COVID-19 infection;
- Make regular clinical evaluation and monitoring;
- Reinforce general measures in collaboration with COUS

IV.RECOMMENDATIONS FOR RENAL TRANSPLANTATION

- In all cases strengthen the general measures;
- Consider him as a CKD patient (see 2. CKD).
- If influenza-like illness, contact the treating doctor;
- **If COVID-19 positive**
 - Hospitalize in an individual cabin;
 - Maintain corticosteroid treatment (5 to 10 mg / d);
 - Systematically stop mTOR inhibitors (Sirolimus or Everolimus);
 - Reduce the doses of immunosuppressive drugs (mycophenolic acid, tacrolimus / ciclosporin, azathioprine); stop them depending on the existence or not of respiratory distress;
 - Resume immunosuppressive drugs on day 15 after virological cure and depending on the residual rate if possible;
 - Pay attention to the interactions between immunosuppressive drugs and the treatment of Covid-19.

In all cases, the patient's referring transplant service must be informed and will be able to help with the overall therapeutic management of the patient.

V. RECOMMENDATIONS FOR ACUTE KIDNEY INJURIES DURING THE COVID-19

- Patient infected with COVID-19 with acute kidney injury requiring an hemodialysis session (see Figure 4):
- Carry the patient to the dedicated hemodialysis center by the SAMU;
- Admit the patient to the emergency room prepared for this purpose
- Perform the hemodialysis session in the presence of two nurses, a nephrologist and a resuscitator during the entire session wearing PPE;
- Redirect the patient by the SAMU team to CTEPI;
- Disinfect the emergency hemodialysis room and manage waste according to procedures enacted by the MSAS.

VI. RECOMMENDATIONS TO THE AUTHORITIES

- Make all individual protective equipment available to dialysis centers;
- Allow patients with a medical certificate to go to their place of treatment;
- Make means of transport available for the dialysis staff in charge of emergencies;
- Make professional cards available to dialysis staff;
- Provide Thermoflash® at all dialysis centers;
- Put a hand washing device in front of all dialysis centers.

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VII. APPENDICES

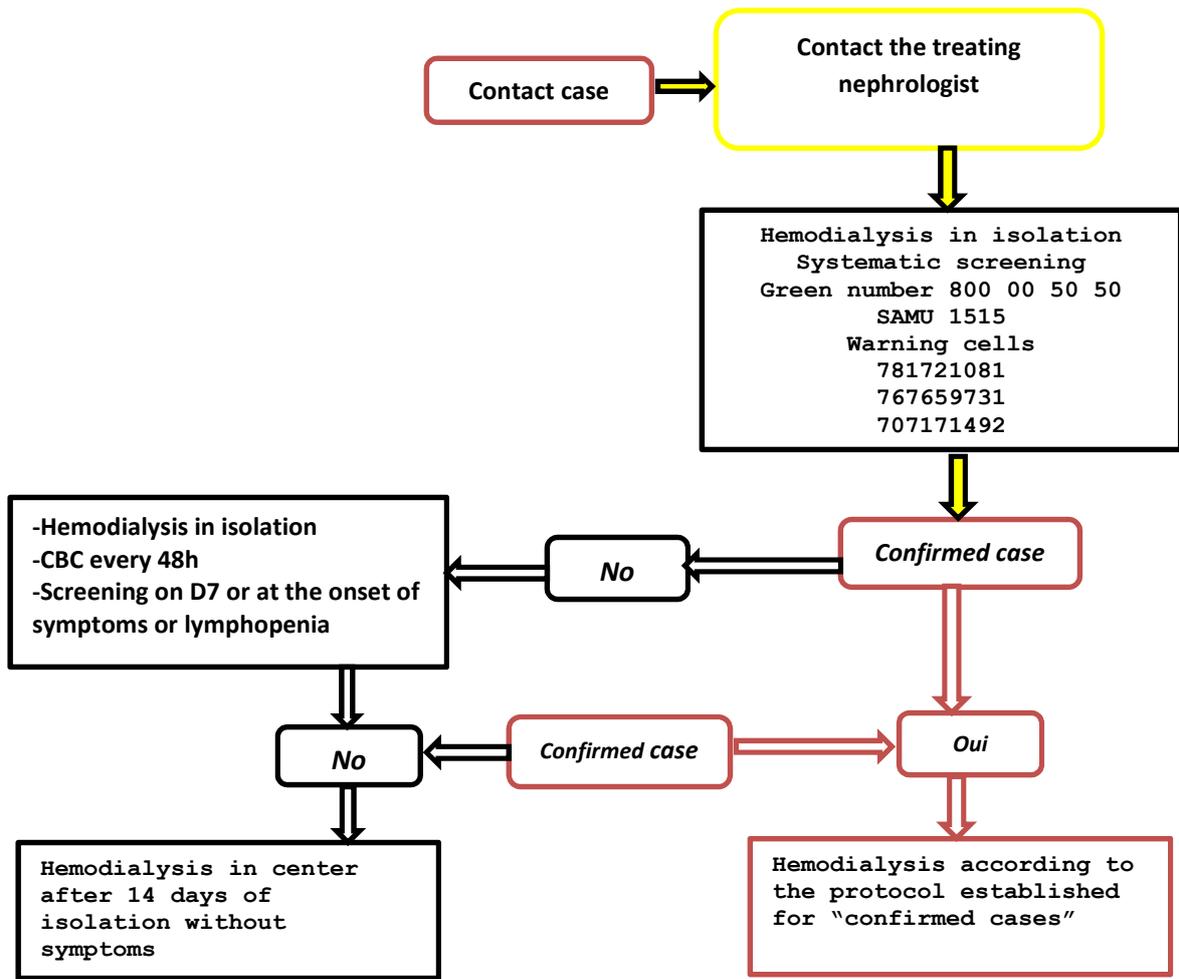


Figure 1: Algorithm for managing a chronic dialysis patient in contact with an individual identified as COVID-19 positive

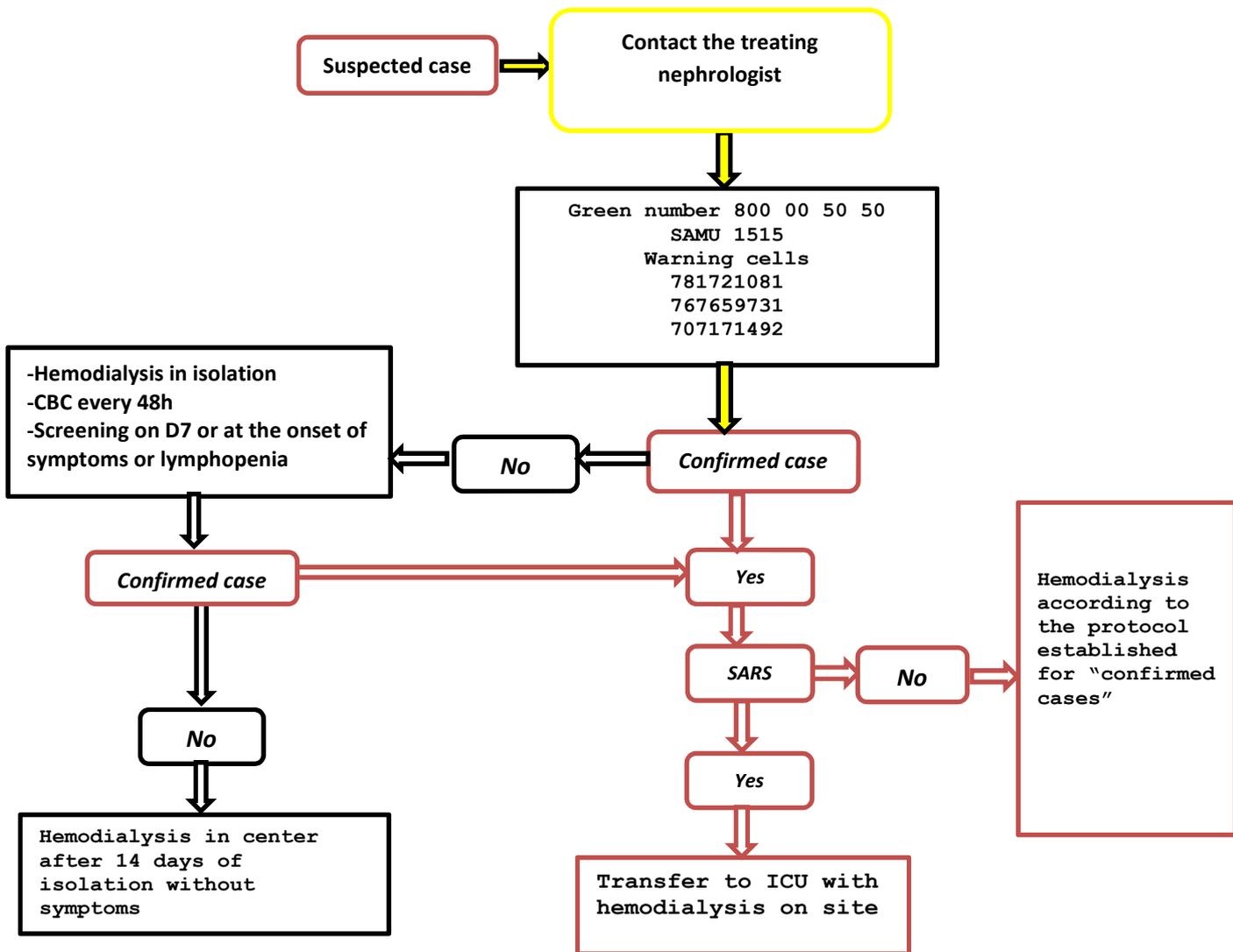


Figure 2: Algorithm for the management of a chronic dialysis patient suspected or confirmed of COVID-19 infection

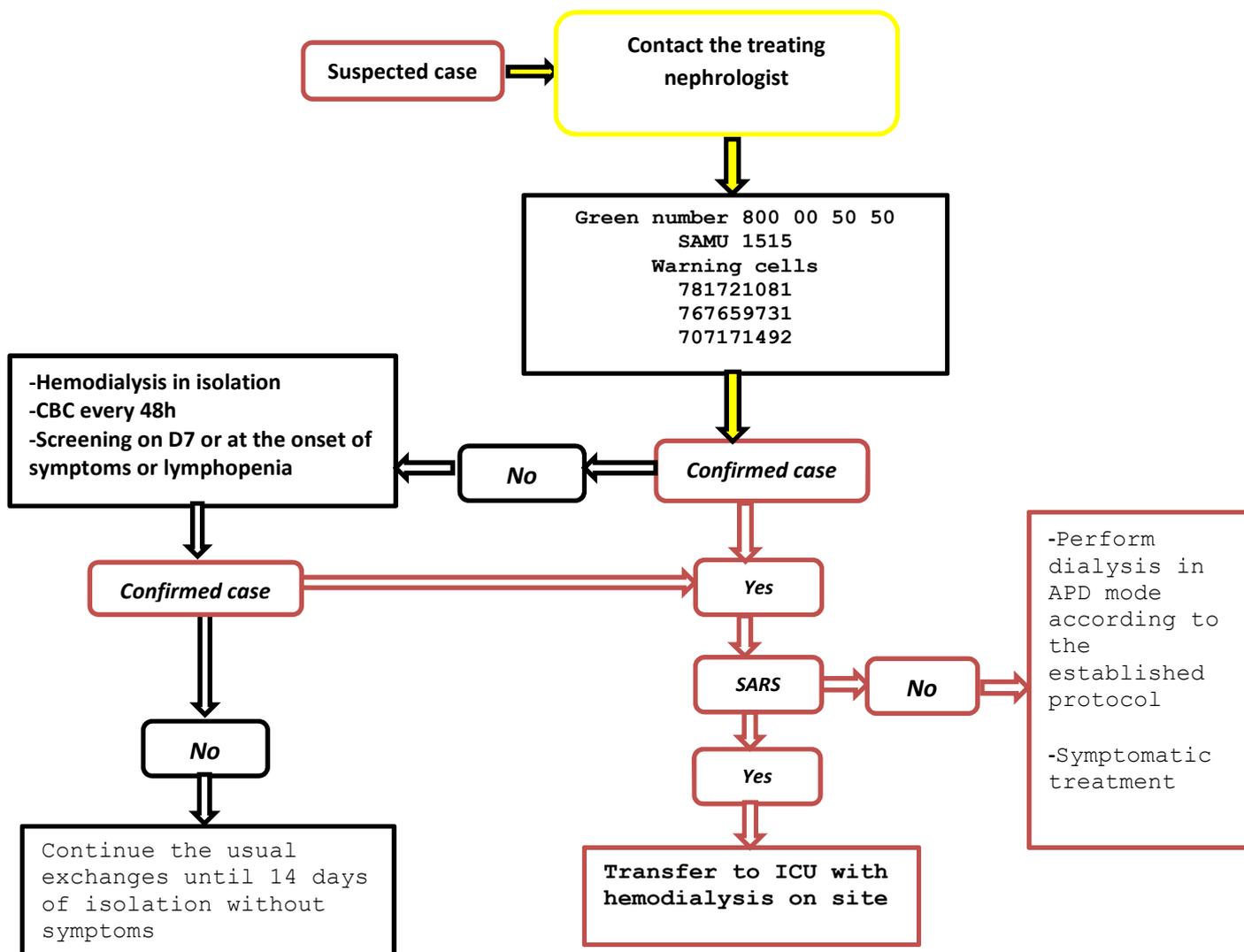


Figure 3: Algorithm for the management of a patient on peritoneal dialysis suspected or confirmed of a COVID-19 infection

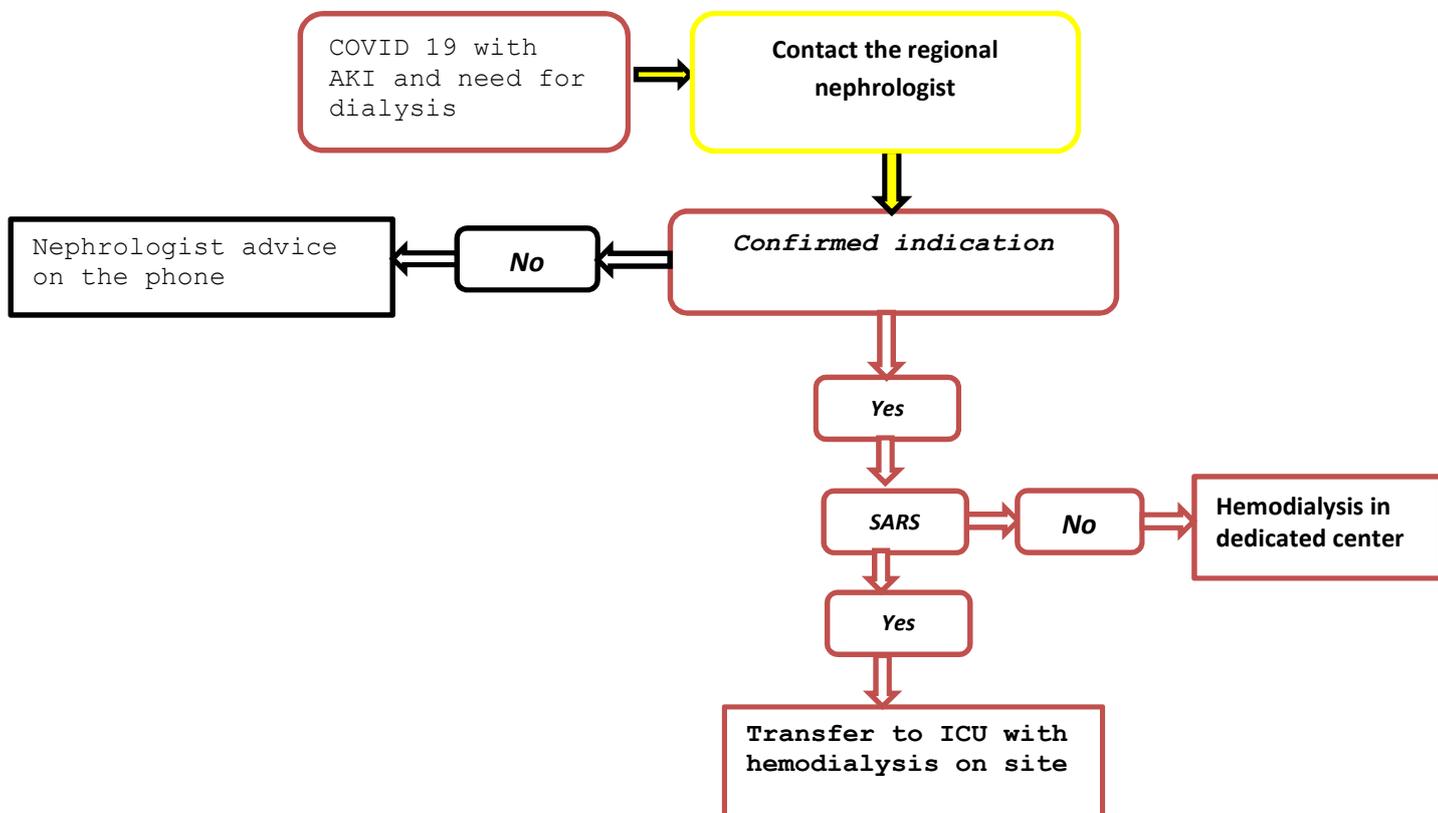


Figure 4: Management algorithm for a COVID-19 positive patient with an hemodialysis indication