



GUIDANCE DOCUMENT FOR DISINFECTION & SANITIZATION PROTOCOLS FOR MRI AT AIIMS, NEW DELHI (Related to COVID-19)

- The policies for infection control in diagnostic procedures vary between institutes and countries. Also the necessity of a procedure is decided by the concerned clinicians and the radiology team, which may vary. But broadly accepted procedures for COVID19 patient is mobile X-ray. However, depending upon the need, we can never deny any procedure for any patient, if it is an absolute requirement for the management of the patient.
- In the case of utility of CT, PET or MRI, there may be two scenarios, one where the personnel working in the department know that they are dealing with a patient suspected or confirmed of COVID19, and the second would be, where the personnel, including the consultants and residents do not know about the possible COVID19 positive status.
- This article discusses the precautionary, disinfection and sanitizing protocols with regard to the MRI during the time of COVID crisis.

Scenario 1: Prior information is provided to the health workers about the possibility or confirmed COVID19 patient (positive or suspected case).

Precautionary measure:

- All health workers in the zone should wear PPE (Surgical Gown + N-95 Mask + Goggles + Gloves)
- All necessary precautions to be taken, as the area is with closed air conditioning and the air may be contaminated.
- The patient should be made to wear a mask prior to entering the MR zone.
- Patient should be shifted to the MRI table using triple layer bed linen {disposable bed cloth (first layer in contact with the patient) on a plastic of minimum 200 microns thickness on a cloth bedsheet}.
- Only the bed sheet should be handled while transferring the patient (if Patient Transfer System Board is not available).
- The coil should be covered with a layer of plastic sheet and the patient's body should not touch any coil.
- While imaging a COVID-19 patient (RT-PCR positive or suspected positive), precaution from droplet is important.
- After every patient, the gantry and the patient table are to be cleaned with any of the approved product (please consult the vendor).
- The coil should be cleaned with appropriate precaution, to make sure that the plug and the RF pins are not wet.

Disinfection and sanitising:

- After the MRI is over, the floor areas should be sanitised using 1% Hypochlorite solution, with a wet cloth mopping (to be disposed of). Also, all the equipment, including finger grip of the Pulse

oximeter, physiological monitor, infusion pump, ventilator and anaesthesia workstation should be sanitised. Also, it is prudent to check for any leaked saliva/ serum/ fluid on the MRI table.

- The gantry and the patient table should be wiped with permitted cleaning product (normally bacillocid is allowed, but it is better to check with the vendor). The coil also should be wiped with a dry cloth.
- The air-conditioning units (for the examination room) should be switched off during the cleaning process.
- The MRI table has a lot of connections for the plugging in of the coils, and should dry.

If a dedicated MRI is available for screening COVID19 patients then, the next patient should be screened after approximately 2 hours.

If a dedicated MRI is not available, then the air-conditioning filter should be cleaned properly. The units should be switched off for a period of 2 hours and switched on again. The coils need to be sanitised once again, after the patient table and coils are dry, next patient may be taken. The approximate duration of wait time would be 3 hours.

Scenario 2: If the radiographer or other health workers did not get any information regarding the COVID status and the patient was wheeled in like a normal patient (patient asymptomatic, but tested positive for Covid19 after the scanning is done)

In this case, the probability of precautions being followed are very little. If any of the patient tested positive (after the MR scan is over), then:

- Alert the Personnel immediately. Those who were in contact with the patient should be quarantined for 14 days (self-quarantine). Those in the peripheral areas (including the security guard) should report in case of any symptoms, though they may not get infected.
- The screening area, the patient transfer area and the patient waiting area (Zones I to IV) are also to be sanitised.
- The console area needs to be sanitised.
- The floor areas should be disinfected using 1% Hypochlorite solution, with a wet cloth mopping (to be disposed of). Also, all the equipment, including physiological monitors, infusion pump, Pulse oximeter, ventilator and anaesthesia workstation should be sanitised. Also, it is prudent to check for any leaked saliva/ serum/ fluid on to the MRI table.
- The air-conditioning units (for the examination room) should be switched off during the cleaning process.
- After 24 hours, the MRI examination room should be disinfected again, and all the equipment (that were used for the COVID19 patient) to be cleaned and sanitised again.
- Repeat the process after 12 hours.

After making sure of the humidity level inside the examination room, and the RF coil plugs are dry (best is to wait for 12 hours), the system can be used again. This means that 72 hours will be safe period after sanitising the MRI examination area (if proper precautions were not taken prior to the MRI of the infected patient).

Please note:

- a. In case of ventilated patients, air exchange processes may not be employed due to patient masking.
- b. The personnel on disinfection control/ Sanitising job should wear necessary PPE (Surgical Gown + N-95 Mask + Goggles + Gloves)
- c. Airborne precautions are reserved for those patients who are critically ill or are undergoing aerosol-generating procedures (bronchoscopy, intubation, nebulization, or open suction)¹.

Reference

1. Mossa-Basha M, Meltzer CC, Kim DC, Tuite MJ, Kolli KP, Tan BS., 2020 Radiology Department Preparedness for COVID-19: Radiology Scientific Expert Panel. Radiology :200988. doi: 10.1148/radiol.2020200988.

This document is dynamic and will be updated with further clinical scenarios as the need arises.

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