

# PRAYAS4IAS

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# Special Issue

May (Week 2)

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## **All about the use of CT scans and steroids for COVID-19**

(Source: [The Hindu](#) )

**Context:** *As doctors try out different protocols to manage patients with COVID-19, Dr. Randeep Guleria, director of the All India Institute of Medical Sciences (AIIMS) and member of the National Taskforce on COVID-19, has cautioned against the use of CT scans indiscriminately to diagnose the disease, especially in the early stages. This exposes individuals to unnecessary radiation, which could be harmful in the long run, he said. A single CT scan is equal to 300 X-rays, Dr. Guleria warned, which may increase the risk of cancer later in life for young people. Doctors and the World Health Organization (WHO) are also cautioning against the use of corticosteroids like dexamethasone, a potent anti-inflammatory drug, for patients who have non-severe COVID-19. Corticosteroids have been proven to benefit patients with moderate and severe infection.*

### **When is a CT scan advised for a COVID-19 patient?**

- An RT-PCR test is the standard for diagnosis or confirmation of COVID-19. Use of CT for the diagnosis of COVID-19 should be restricted to that subgroup of patients who may have classical symptoms of the illness but have a negative RT-PCR test result.
- However, a chest CT can be useful in evaluating patients with moderate or severe disease, to identify complications like thromboembolism or pneumomediastinum.
- There are certain situations involving COVID-19 patients in which a clinician might depend on a CT scan to arrive at treatment decisions.
- These include scenarios where a patient may have classical symptoms of COVID-19 but his RT-PCR test is negative, or situations when a CT pulmonary angiogram might be in order to rule out pulmonary embolism in a patient who is on anti-coagulants and steroids and is not showing any signs of recovery.
- Also, in cases where a patient in the ICU with severe COVID-19 is not showing any improvement and a chest X-ray shows new lesions, a CT appearance might give a clue towards a diagnosis of dangerous COVID-19-associated fungal super-infections like aspergillosis or mucormycosis.
- In a fourth scenario, a clinician might order a CT chest to rule out spontaneous pneumomediastinum, a life-threatening complication.
- The consensus statement from Fleischner Society, an international, multidisciplinary association for thoracic radiology, states that “imaging is not indicated” in suspected COVID-19 infection with mild clinical features.
- The statement supports the use of imaging in patients with worsening respiratory status as well as in those with moderate to severe clinical features that are indicative of COVID-19 pneumonia.
- To sum up, although CT has been used in assessing the severity of COVID-19 pneumonia, its routine use is not recommended.

### **Are multiple CT scans harmful?**

- When indicated, a chest CT should be performed with a low-dose, single-phase protocol using fast scanning techniques to minimise motion artifacts (patient movement leading to subtle errors).
- There is no evidence to support the use of routine multi-phase chest CT in patients with COVID-19 pneumonia.
- One CT scan was equivalent to almost 300 to 400 chest X-rays, which put youngsters at substantial risk of cancer in the long term.
- A study published in the New England Journal of Medicine in 2007 said based on data from 1991 to 1996, 0.4% of all cancers in the U.S. may be attributable to radiation from CT studies and that the current estimate could be in the range of 1.5% to 2%.



- Apart from all this, the risks of transmission and contamination faced by radiology technicians and staff every time a COVID-19 patient undergoes diagnostic imaging, especially in an air-conditioned, closed space, cannot be dismissed.

### **Why are steroids being prescribed for COVID-19 patients?**

- Even though many doctors in India had started treating seriously ill COVID-19 patients with corticosteroids like dexamethasone much earlier during the pandemic, recommendation on their use from international agencies like the WHO came only in September 2020, following the U.K.'s RECOVERY Trial, which found mortality benefit for patients who received steroids.
- In many patients, death occurs following a hyper-immune response (cytokine storm) to the SARS-CoV-2 virus, which damages the lungs and other organs, leading to multi-organ dysfunction syndrome.
- Corticosteroids like dexamethasone, as anti-inflammatory agents, work by calming down the immune system and preventing the progression of organ damage.
- Steroids are the most potent weapon we have to combat COVID-19. But the therapeutic window for starting steroids has to be spot-on. Determining the timing, dosage and duration is an art which has to be mastered.
- One of the main concerns is that we do not want to start steroids too early in the illness when viral replication is happening as it might interfere with the immune system's natural ability to fight back. We also do not want to miss that critical point when steroids can prevent the immune system from unleashing the cytokine storm, he says.
- The WHO guidelines say that steroids may be administered to patients whose resting saturation levels are below 94% and whose respiration rate at rest is over 24 per minute.
- However, steroids can benefit some patients who are not on supplementary oxygen yet but are showing early indications that they might worsen.
- Kerala's guidelines thus talk about recognising exertional desaturation — the fall or depletion in oxygen saturation reading by over 3% from the baseline oxygen levels, post-exercise or after the six-minute walk test — and addressing it at the right time so that interstitial inflammation can be arrested.
- The walk test requires individuals to walk for six straight minutes, without a pause, on an even surface with an oximeter on the finger. After six minutes, if the oxygen level does not go down, the individual will be considered healthy.
- But if the oxygen level drops below 93%, or by 3%, or if the individual suffers from breathlessness, then they are advised to seek medical attention.

### **When do steroids become a double-edged sword?**

- That said, steroids can turn out to be a double-edged sword if the dosage, timing or duration of the drug goes wrong.
- Steroids are not mandated for all patients and certainly not for mild patients in the early stages of the illness. The trigger for starting steroids has to be exertional desaturation and not the day of illness.

## **All about the Al-Aqsa Mosque dispute between Israel and Palestine**

(Source: [Indian Express](https://www.indianexpress.com) )

**Context:** *The violent confrontations between Palestinians and Israeli security forces at Al-Aqsa Mosque in Jerusalem this month reflect its significance as part of one of the most contested pieces of religious territory in the Holy Land.*

### **What is Al-Aqsa Mosque?**

- Al-Aqsa Mosque is one of the holiest structures in the Islamic faith.



- The mosque sits inside a 35-acre site known by Muslims as Haram al-Sharif, or the Noble Sanctuary, and by Jews as the Temple Mount. The site is part of the Old City of Jerusalem, sacred to Christians, Jews and Muslims.
- In Arabic, “aqsa” translates as farthest, and in this case it is a reference to Islamic scripture and its account of the Prophet Muhammad traveling from Mecca to the mosque in one night to pray and then ascending to heaven.
- The mosque, which can hold 5,000 worshippers, is believed to have been completed early in the eighth century and faces the Dome of the Rock, the golden-domed Islamic shrine that is a widely recognized symbol of Jerusalem. Muslims consider the whole compound to be holy, with crowds of worshippers filling its courtyards to pray on holidays.
- For Jews, the Temple Mount, known in Hebrew as Har Habayit, is the holiest place because it was the site of two ancient temples — the first, was built by King Solomon, according to the Bible, and was later destroyed by the Babylonians; and the second stood for nearly 600 years before the Roman Empire destroyed it in the first century.
- The United Nations Educational, Scientific and Cultural Organization, UNESCO, has classified the Old City of Jerusalem and its walls as a World Heritage Site, meaning it is regarded as “being of outstanding international importance and therefore as deserving special protection.”

#### **Who has control over the mosque?**

- Israel captured East Jerusalem, including the Old City, from Jordan during the Arab-Israeli War of 1967, then annexed the area. Israel later declared a unified Jerusalem to be its capital, though that move has never been internationally recognized.
- Under a delicate status quo arrangement, an Islamic trust known as the Waqf, funded and controlled by Jordan, continued to administer Al-Aqsa Mosque and the Dome of the Rock, as it had done for decades, a special role reaffirmed in Israel’s 1994 peace treaty with Jordan.
- Israeli security forces maintain a presence on the site and they coordinate with the Waqf. Jews and Christians are allowed to visit, but unlike Muslims, are prohibited from praying on the grounds under the status quo arrangement. (Jews pray just below the sacred plateau at the Western Wall, the remnants of a retaining wall that once surrounded the Temple Mount.
- Tensions over what critics call the arrangement’s discrimination against non-Muslims have periodically boiled over into violence.
- Adding to the tensions is Israel’s annual celebration of Jerusalem Day, an official holiday to commemorate its capture of the entire city. The celebration, is a provocation for many Palestinians, including residents of the eastern part of Jerusalem.
- The Palestinians want East Jerusalem to be the capital of a future Palestinian state — a prospect that seems increasingly remote.

#### **Does Israel want to take full control of the site?**

- Israeli officials, including Prime Minister Benjamin Netanyahu, have said they do not intend to change the status quo.
- But some Israeli religious groups have long pressed for the right to pray at the site. In April, Jordan’s Foreign Ministry formally complained about large numbers of Jewish visitors to the site, calling it a violation of the status quo.

#### **What is different about the latest protests?**

- In the weeks before the outbreak of violence Monday at Al-Aqsa, tensions were building between some Jews and Palestinians on issues unrelated to the mosque compound.
- They included violent clashes between Israelis and Palestinians that erupted a few weeks ago around the Old City. Some Palestinians attacked Orthodox Jews in Jerusalem, and an extremist Jewish supremacy group conducted a march in which participants chanted “Death to Arabs.”



- Palestinians also were angered that the police had forbidden them to gather at a favorite plaza by the Old City during the first weeks of the holy month of Ramadan.
- In a further inflammation of tensions, Palestinians have battled with the Israeli police over the expected eviction of Palestinian residents of East Jerusalem's Sheikh Jarrah neighborhood to make way for Israeli settlement construction.
- The clashes have come as the Israeli government is in political limbo, after four indecisive elections over the past two years, and after President Mahmoud Abbas of the Palestinian Authority indefinitely postponed Palestinian legislative elections scheduled for later this month. It would have been the first such ballot since 2006.

### **How have previous clashes shaped the Israeli-Palestinian conflict?**

- Bitter recriminations and hardened attitudes have reverberated from all of the confrontations over the religious shrines in Jerusalem's Old City, but some especially stand out as having helped shape Israeli policy.
- In 1990, for example, deadly riots exploded after a group of Jewish extremists sought to lay a cornerstone for a temple to replace the two destroyed in ancient times. The violence led to widespread condemnation of Israel, including by the United States.
- In 2000, a visit to the site to assert Jewish claims there, led by right-wing Israeli politician Ariel Sharon — then Israel's opposition leader — was the catalyst for an explosive bout of Israeli-Palestinian violence that led to the Palestinian uprising known as the second Intifada.
- In 2017, a crisis erupted after three Arab-Israeli citizens at the compound shot and killed two Israeli Druze police officers. That led the Israeli authorities to restrict access to the site and install metal detectors and cameras.