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Proposed Imaging Guidelines for Pregnant Women Suspected of Having COVID-19

From:

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To the Editor,

In view of the indispensable role of imaging studies and CT scans in the diagnosis and follow up of COVID-19 patients, there are reports that CT has a higher sensitivity than Polymerase chain reaction in detecting COVID-19 (1). Also, CT scan has been considered as a necessary part of the evaluation in most suspected subjects (2) or in patients with respiratory complications in order to rule out a wide spectrum of diseases in the differential diagnosis. Given the importance of a closer review of the imaging studies, we decided to evaluate chest CT scans through telemedicine and counseling groups by expert radiologists in our country (3,4).

One of the important patient groups in this pandemic is pregnant women. Because of the associated higher risk of COVID-19 in pregnancy (5) and the defined constraints for use of ionizing radiation in pregnant women (6), the Iranian Society of Radiology devised the following guidelines to gain the maximum benefit from imaging techniques along with optimal protection and safety for pregnant women. In general, ionizing radiation must be avoided in pregnant women as much as possible. Its utilization must be narrowed to limited indications with a high level of protection. The maximum permitted dose of radiation exposure is below 50 mGy in pregnant women. The absorbed dose of radiation for a fetus whose mother undergoes chest x-ray and chest CT scan are 0.002 mGy and 0.2 mGy respectively, which are not associated with known adverse effects on fetal health and thus are safe (3).

1. It is prudent to avoid radiation imaging modalities such as chest x-ray or CT scans in pregnant women suspected of having COVID-19, as much as possible.
2. Chest x-ray or CT scan requests must be based on thorough examination, in case of investigating differential diagnoses of respiratory problems during the COVID-19 pandemic, along with other conditions like pulmonary edema etc. or appraisalment of COVID-19 pulmonary infection in case of clinical indications.
3. The patient must be well informed of the necessity, benefits and possible risks of the imaging procedures (chest radiography or CT scan), by the attending physician.
4. If requested by the physician, the imaging procedure (chest x-ray or CT scan) maybe done if the following conditions apply from the admitted ward to the imaging department: The CT scan request in the hospital information system is marked in red, and in coordination with the radiology department admission, the pregnant patient is transferred to the ward when no other patient is there and the ward is disinfected. Also, the patients' files should be placed in the red cover and the patient's clothing should be marked with a sign related to high-risk patients, so that maximum protection measures can be implemented as soon as they enter the imaging section and eliminate any possible errors.
5. To minimize the dose of exposure, the minimum possible dose for radiography must be utilized and CT scans must be carried out in accordance with the low dose CT protocol.
6. When chest CTs and chest x-rays are indicated, local protection for the fetus (abdominal lead shields) must be utilized.
7. Standard personal protection equipment for the corona virus like masks, gloves, gowns, goggles, and disinfectants must be available for the patients, the accompanying people and all other personnel who are involved in the procedure, in accordance with the relevant protection protocols.
8. During the first trimester of pregnancy, the decision to proceed with chest x-ray or CT scan must be made with meticulous consideration of the risks involved. It is advisable to initially perform chest x-ray with abdominal shield and then proceed to CT only if the chest X-ray turns out to be inconclusive. During the 2nd and 3rd trimesters, low dose CT may be requested in the first stage.
9. The attending physician is responsible for making decisions on requesting or repeating imaging procedures and continuation or termination of pregnancy.
10. It is compulsory to use lead abdominal shields especially in the 1st trimester, even if it hampers visualization of the sub-diaphragmatic areas in the imaging field.

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