

CHARACTERISTICS OF MSCT AND DIAGNOSTIC VALUE COVID-19 IN PREGNANCY

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Abstract. *This study included ten pregnant women infected with COVID-19 who were treated at the Sam State Medical University clinic from January 20, 2021 to February 6, 2021. Clinical data and chest CT data were collected, and clinical symptoms, laboratory tests were analyzed. indicators and CT images. to study CT characteristics and diagnostic value of COVID-19 during pregnancy.*

Keywords: *COVID-19, qRT-PCR, lymphocytes, D-dimer, β -coronavirus, Hubei Province, Broncho grams, SARS-CoV-2.*

INTRODUCTION:

Since December 2019, a large number of cases of pneumonia caused by the novel coronavirus (2019-nCoV) have been reported in Wuhan, the capital of Hubei Province and a major city with a population of approximately 11 million people located in the central region of the People's Republic of China. This newly recognized β -coronavirus causes COVID-19, which has rapidly spread throughout China and crossed international borders due to human-to-human transmission via intercontinental trips. As of 24:00 on February 4, 2020, 24,324 cases of COVID-19 have been confirmed in China. During pregnancy, the mother's body undergoes many changes, including changes in anatomy, function body and immune status; which leads to an immunosuppressive state. The newly discovered 2019-nCoV represents a large number of people susceptible to the newly discovered severe acute respiratory syndrome coronavirus 2 (SARS-CoV 2). It is known that 2019-nCoV can infect pregnant women; these women are more susceptible to COVID-19, and the disease can cause potential complications for the mother and fetus. Therefore, increased attention should be paid to pregnant women patients with COVID-19. Unfortunately, experience with the treatment of COVID-19 during pregnancy is limited. Additionally, there have been no reports of imaging manifestations of COVID-19 during pregnancy in China or other countries. According to "Diagnostics and treatment of pneumonia in new Coronavirus Infection (Trial 5) of the National Health Commission, images of 2019-nCoV pneumonia showed a rare pleural effusion. However, COVID-19 during pregnancy is often found to be associated with pleural effusion. This study conducted a retrospective analysis using clinical data and computed tomography (CT) images of the chest of pregnant women. women with COVID-19 treated in our hospital from January 20, 2021 to February 6, 2021. Data generated were summarized to improve the understanding and diagnosis of COVID-19 during pregnancy.

MATERIALS AND METHODS:

We conducted a retrospective review of the medical records of ten pregnant women with COVID-19 admitted to the hospital from January 20, 2021 to February 6, 2021. Six pregnant women with pneumonia COVID-19 tested positive for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) based on quantitative reverse transcription-polymerase chain reaction (qRT-PCR) analysis samples from the respiratory tract. The remaining four cases were

clinically diagnosed according to the Diagnosis and Treatment of Pneumonia in Novel Coronavirus Infection (Trial 5). Written informed consent was obtained from each enrolled patient.

Maternal throat swab samples were collected and tested for SARS-CoV-2 using a kit recommended by the Chinese Center for Disease Control and Prevention (CDC) (BioGerm, Shanghai, China), according to WHO guidelines for quantitative RT-PCR. All samples were processed simultaneously in the clinical laboratory department hospitals. Positive COVID-19 cases were defined as cases that tested positive from any laboratory.

RESULTS:

Distribution analysis showed the presence of lesions in one lung in two patients (20%), in one right and one left lung. Lesions in both lungs were observed in eight patients (80%). There were seven patients (70%) with lesions distributed in the upper lobes, nine patients (90%) with lesions distributed in the middle lobe (lingular segment), and ten patients (100%) with lesions distributed in the lower lobe. Ten patients (100%) had lesions distributed in the peripheral region of the lungs, and in four patients (40%) the lesions were distributed in the non-peripheral region. Morphological analysis showed that there were six patients (60%) with mottled shadow and nine patients (90%) with slight mottled shadow. Analysis density showed that there were ten (100%) patients with pure ground-glass opacity (GG), among whom six (60%) GMO was accompanied by consolidation (Fig. 1), one (10%) GMO was accompanied by reticular and/or or thickening of the interlobular septum, and 4 (40%) had evidence of an intrabronchial air bronchogram (Fig. 2).

Laboratory studies showed that the white blood cell count was normal in nine patients and slightly higher in one patient (10.23×10^9). The lymphocyte ratio decreased in two patients by 12% and 14%, respectively. C-reactive protein levels were elevated in seven patients (range 21.16–60.3 mg/L), and D-dimer levels were elevated in eight patients (range 507–2141 ng/mL). Six patients had low total protein levels (range 35.3–56.5 mg/L). Two patients had a slight focal ground-glass opacification (GG) in one lung, while eight patients had multilobar MS in both lungs with partial consolidation. Peripheral and non-peripheral involvement was observed in ten (100%) and four (40%) patients, respectively. Four patients had signs of intrabronchial air bronchograms, six patients had small bilateral pleural effusions, and none of them had lymphadenopathy. Dynamic observations were carried out in four patients after treatment for COVID-19.

Among these four patients, one patient had initial examination was normal, but after 3 days new lesions were observed; 1 patient experienced progression after 7 days of treatment with expansion of the affected area; and in the other 2 patients it was observed improvement after 14 days of treatment with a decrease in the density and area of the lesions and the appearance of linear opacity. with expansion of the affected area; and the other 2 patients showed improvement after 14 days of treatment with a decrease in the density and area of the lesions and the appearance of linear opacity. with expansion of the affected area; and others have 2 patients showed improvement after 14 days of treatment with a decrease in the density and area of lesions and the appearance of linear opacity.

Six patients (60%) had small bilateral pleural effusions (Figure 3), while as no patient had lymphadenopathy. The study analyzed dynamic changes and prognosis of lesions. A follow-up CT scan of the chest was performed in four patients. Two patients experienced improvement in symptoms with less density Six patients (60%) had small bilateral pleural effusions (Figure 3), while as no patient had lymphadenopathy. The study analyzed dynamic changes and prognosis of lesions. A follow-up CT scan of the chest was performed in four patients. Two patients showed

improvement in symptoms with less lesion density and reduced lesion area (Figures 4a and 4b); In 1 patient, during the initial examination, the condition was normal, and after 3 days of observation, a small spotty HGO was observed in the upper lobe of the left lung with signs of an intrabronchial air bronchogram (Fig. 5a and 5b); at In one patient, the disease progressed after 7 days of observation with an increase in the area of the lesion, an increase in density and the appearance of linear opacity (Fig. 6a and 6b). All throat swabs from newborns were tested twice for the presence of nucleic acid of the new coronavirus and were negative.



Fig 1. A 27-year-old woman who has been menopausal for 38 +2 weeks with fever and cough for 2 days.

Three days ago, her husband was diagnosed with COVID-19. She was diagnosed with COVID-19. The left upper lobe and the dorsal segment of the right lower lobe had a mottled shadow. Faint shadows of density were visible throughout the lungs, showing a halo sign.



Fig. 2. A 27-year-old woman who has been menopausal for 38 + 6 weeks has tested positive for COVID-19.

In the left lingular segment, focal consolidation could be seen within the intrabronchial air bronchogram findings. A small effusion in the bilateral pleural cavity was confirmed.

There are several limitations to our study. First, the group of pregnant women with COVID-19 included in this study was in the third trimester of pregnancy; there is still no understanding of pregnant women with COVID-19 in early and mid-pregnancy. In addition, the quantity there are relatively few confirmed cases, and we will further accumulate and summarize data for relevant studies.

In conclusion, this study showed that COVID-19 during pregnancy mainly occurs in early and advanced stages based on CT images. CT scan of the chest revealed small focal or patchy GCTs distributed in the peripheral zone both lungs, with partial consolidation, a sign of intrabronchial air bronchogram and were accompanied by small bilateral pleural effusions. Thus, CT plays an important role in early screening of patients with atypical symptoms and/or a negative nucleic acid test, as well as in the follow-up and evaluation of the effectiveness of patients with a suspected or confirmed diagnosis COVID-19.

CONCLUSIONS:

CT features of COVID-19 in pregnancy were mainly observed in early and advanced stages, and multiple new lesions were common. And inside the outbreak there were compactions of varying sizes and degrees. Moreover, the original ground glass lesions may have coalesced or been partially absorbed. Six patients had slight bilateral pleurisy. Therefore, computed tomography may play an important role in early screening, follow-up, and efficacy assessment of suspected or confirmed cases of COVID-19 in pregnant women.

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