Effects of SARS-CoV-2 infection on pregnant women and their infants: A retrospective study in Wuhan, China

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ABSTRACT

Context: The pandemic of a novel coronavirus, termed SARS-CoV-2, has created an unprecedented global health burden.

Objective: To investigate the effect of the SARS-CoV-2 infection on maternal, fetal, and neonatal morbidity and other poor obstetrical outcomes.

Design: All suspected cases of pregnant women with Coronavirus Disease 2019 (COVID-19) admitted into one center of Wuhan from Jan 20, 2020 to March 19, 2020 were included. Detailed clinical data of those pregnancies with COVID-19 were retrospectively collected and analyzed.

Results: Twenty-seven laboratory or clinically confirmed SARS-CoV-2 infection pregnant women (4 early pregnancies included) and 24 neonates born to the 23 late pregnant mothers were analyzed. On admission, 46.2% (13/27) of the patients had symptoms, including fever (11/27), cough (9/27) and vomiting (1/27). Decreased total lymphocytes count was observed in 81.6% (22/27) patients. Twenty-six patients showed typical viral pneumonia by chest computed tomography (CT) scan, while one patient confirmed with COVID-19 infection showed no abnormality on chest CT. One mother developed severe pneumonia three days after her delivery. No maternal and perinatal death occurred. Moreover, one early preterm newborn, born to a mother with complication of premature rupture of fetal membranes, highly suspected with SARS-CoV-2 infection, was SARS-CoV-2 negative after repeated real-time reverse transcriptase polymerase chain reaction testing. Statistical difference was observed between the groups of early pregnant and late pregnant women with COVID-19 in the occurrence of lymphopenia and thrombocytopenia.

Conclusions: No major complication were reported among the studied cohort, though one serious case and one perinatal infection were observed. Much effort should be done to reduce the pathogenic effect of COVID-19 infection in pregnancies.

INTRODUCTION

Since December, 2019, a series of pneumonia cases of unknown cause was reported in Wuhan, Hubei, China.[1] Soon after the report, deep sequencing analysis indicated that a novel beta coronavirus SARS-CoV-2 was the pathogen, and the disease caused by SARS-CoV-2 was currently termed as Coronavirus Disease 2019 (COVID-19).[2,3] Although the strictest preventive measures were taken in Wuhan, in a short span of time COVID-19 were reported rapidly in China and other countries around the world. SARS-CoV-2 caused a severe public health problem. On March 11, 2020, COVID-19 was declared a pandemic by the World Health Organization. [4]

With the global outbreak of the COVID-19, increasing evidences enriched our knowledge of the genetic, virologic, epidemiologic and clinic aspects of this pandemic novel coronavirus infection pneumonia.[5-7]

Pregnant women experience changes in their bodies that may increase their risk of pneumonia infections.[8] There are more and more reports of pregnant women with COVID-19 infection.[9, 10] However, many issues in this special population with COVID-19 were still largely undefined. An important question that remains unanswered is: whether SARS-CoV-2 can be transmitted from a pregnant woman to her fetus. Large continuous investigation on the pregnant women with COVID-19 and their newborns remains merited.

In this study, we report the clinical characteristic and obstetrician outcome of 27 pregnant women with COVID-19 (4 early pregnancies included), and follow-up information of 24 newborns (including one set of twins) born to 23 late pregnant mothers at a center in

Wuhan, China, from Jan 20, 2020 to March 19, 2020. We include all the hospitalized pregnant women confirmed or clinically diagnosed with COVID-19 infection in the studied center in Wuhan during this epidemic. The focus of the study is to investigate whether pregnant women with COVID-19 are more likely to have serious illness, possibility of maternal-fetal transmission of the virus, and perinatal infections and death.

METHOD

Study Design and Patients

This is a retrospective study conducted in Central Hospital of Wuhan, Tongji Medical College, Huazhong University of Science and Technology in Wuhan, China. The study was approved by the institutional ethics board of the studied hospital (No.202041.). Eligible participants were hospitalized pregnant patients with suspected or probable SARS-CoV-2 infection admitted to the studied center from January 20 to March 19, 2020; cases were diagnosed based on the updated New Coronavirus Pneumonia Prevention and Control Program published by the National Health Commission of China.[11] On Feb 2, clinical diagnosis was proposed for the first time in the fifth edition of guidance for diagnosis and treatment of COVID-19.[12] A laboratory confirmed case with COVID-19 was defined as a positive result to real-time reverse transcriptase polymerase chain reaction (RT-PCR) assay for nasal and pharyngeal swab specimens and/or antibody testing of SARS-CoV-2. Patients who presented with fever and respiratory symptoms were clinically confirmed. Further laboratory and chest radiographic testing also demonstrated typical findings of COVID-19, while pathogen detection of the SARS-CoV-2 were negative.

Data Collection

Clinical records, laboratory results, and chest CT scans were retrospectively reviewed from all the pregnant patients suspected with SARS-CoV-2 infections. The data were reviewed and collected by the ordering physicians from electronic medical records. Information recorded included demographic data, medical history, exposure history, underlying comorbidities, symptoms, signs, laboratory findings, chest CT scans, and treatment measures (ie, antiviral therapy, corticosteroid therapy, and respiratory support etc.). The date of disease onset was defined as the day when the symptom was noticed. The clinical outcomes (ie, discharges, maternal and neonatal morbidity and mortality) were monitored up to March 29, 2020, the final date of follow-up.

Laboratory Confirmation

Repeated tests of RT-PCR for SARS-CoV-2 was done in the suspected cases. All samples were processed and analyzed at the Department of Clinical Laboratory of Wuhan Central Hospital. The combination of nucleic acid and immunological detection of antibodies of SARS-CoV-2 was currently recommended by medical experts and scientists.

RNA was extracted from the collected swab samples. RT-PCR assay was performed using a fluorescence-based quantitative PCR kit with the Chinese Center for Disease Control and Prevention (CDC) recommendation. The assay was conducted in accordance with the protocol established by the World Health Organization.[13]

The commercial SARS-CoV-2IgM/IgG Antibodies Rapid Test kit (Innovita Biological Technology Co. Ltd.) was used to detect antibodies of SARS-CoV-2 in the blood samples of suspected patients according to the manufacturer's protocol (Available since March 4, 2020). Other seven common respiratory virus (Influenza virus A and B, parainfluenza virus 1, 2, 3,

respiratory syncytial virus and adenovirus) were also tested in those suspected cases by immunofluorescence assay.

Statistical Analysis

Categorical variables were described as frequency rates and percentages, and continuous variables were described using mean, median, and interquartile range (IQR) values. Differences in continuous variables were analyzed with independent group t tests when the data were normally distributed; otherwise, the Mann-Whitney test was used. Differences in the categorical variables within the two groups were compared by Chi-square test or Fisher's exact test as appropriate. All statistical analyses were performed using SPSS (Statistical Package for the Social Sciences) version 18.0 software. All statistical tests were 2-sided, and statistical significance was set at $P<.05$.

RESULTS

Clinical Features and Obstetrical Outcomes of Pregnant Women with COVID-19

Nineteen confirmed and eight clinically diagnosed COVID-19 infected pregnant women were included in the current study. All of the eight clinically diagnosed cases had typical clinical symptoms of COVID-19 and had viral interstitial pneumonia by chest CT scan, while pathogen detection for SARS-CoV-2 and the other seven common respiratory viruses were negative. Among this studied cohort of pregnant women, three cases were admitted to the hospital in January, 18 cases in February and six cases in March. Four pregnant women were in their first-trimester, the other 23 pregnant women were all in their third trimester, with the gestational week ranging from 30 weeks to 40 weeks.

The age distribution of studied patients was from 22 to 39 years old. Three patients had underlying diseases; two patients had hepatitis B infection and the other case had schistosomiasis. What's more, seven patients had at least one complication of pregnancy, including gestational diabetes mellitus (3 cases), dysfunction of blood coagulation (3 cases), gestational hypertension (2 cases), hypothyroidism (2 cases), severe preeclampsia (1 case) and hypoproteinemia (1 case).

All patients were given oxygen support (nasal cannula) and antibiotic treatment (orally and intravenously). Nineteen patients were administered antiviral therapy (Arbidol orally and/or ribavirin intravenously). Corticosteroid therapy was given in one patient with severe pneumonia. Additionally, all the four hospitalized early pregnant women voluntarily choose an induction abortion on admission because of COVID-19 infection, though a stable condition was maintained during their pregnancy and no presage abortion were reported. As of March 29, 2020, all the 27 infected pregnant women were discharged after treatment and quarantine isolation.

On admission, 46.2% (13/27) of the pregnant women had symptoms, including fever (11/27) and/or cough (9/27) and vomiting (1/27). Patients' body temperatures fluctuated within a range of 36.3 °C–38.6°C, with two patients exceeding 38.2 °C. During hospitalization, one patient with hepatitis B infection and dysfunction of blood coagulation during her pregnancy developed severe pneumonia (SaO_2 <90%) at three days after the delivery.

Among the 23 women in the third trimester, eighteen of the mothers underwent cesarean section, and five had vaginal delivery. Most mothers delivered on the first or second day of

their admission (19/23). Specifically, one pregnancy presented to the hospital at 35th gestation week plus 4 days with a fever of one-week duration. Then, she had a term delivery by cesarean section at 37th gestation week. Additionally, three patients were combined with premature rupture of fetal membranes (PROM), including one mother with preterm PROM (pPROM) at the 30th gestational week. The mother with pPROM had an emergency caesarean section at 30th gestational week plus 6 days. All the other 22 patients had mature delivery. The prenatal problems included abnormal umbilical cord (n=4), intrauterine distress (n=3), and abnormal amniotic fluid (n=1). (Table 1).

Radiologic and Laboratory Findings of Pregnant Women With COVID-19 at Presentation

All patients had a chest CT scan, twenty-six of them showed typical viral pneumonia—multiple patchy ground-glass shadows in lungs. Nineteen of them presented with bilateral pulmonary lesions, and 7 patients showed with unilateral pulmonary lesions. One patient showed no abnormality on chest CT, while both her nucleic acid test and serological testing results for SARS-CoV-2 were positive.

No significantly difference of CT scan presentation was observed among the confirmed and clinical diagnosis patients. Specifically, 78.9% (15/19) confirmed infection pregnancies showed bilateral pulmonary lesions, in contrast to 62.5% (5/8) clinical diagnosed pregnancies.

The routine blood testing of patients on admission showed that fourteen of the 27 pregnant women had a decreased total lymphocytes count ($<1.5 \times 10^9$ cells per L), with one patient presented with leucopenia (white blood cell count less than 4×10^9/L). Additionally, nine patients were combined with an increased total white blood cells ($>10 \times 10^9$ cells per L)

on admission. Data from laboratory testing also showed that many patients had increased serum levels of D-dimer, C-reactive protein (CRP) and procalcitonin on admission.

During hospitalization, more patients showed abnormal white blood cell (WBC) count and elevated CRP. Moreover, more prominent laboratory testing abnormalities (i.e., leukopenia, lymphopenia, thrombocytopenia) were observed in the case with severe pneumonia (data not shown).

No significant difference of laboratory finding was observed among the confirmed and clinical diagnosis patients. However, there was a statistical difference between the groups of early pregnancy and late pregnant women with COVID-19 in occurrence of laboratory testing abnormalities. Particularly, more patients in late pregnancy showed lymphopenia and thrombocytopenia as compared to those in early pregnancy ($P<.05$, Table 2).

Information of Neonates Born to Infected Mothers

Twenty-four live births (including one set of twins) were delivered to the 23 late pregnant mothers with COVID-19. Among these newborns, twenty-three were full term with a good Apar score, and one early preterm infant had 1 min Apar 4 and 10 min Apar 7. In addition, one of the twin newborns had a birthweight lower than 2500 g, with a birthweight of 2350g.

Twenty-three of the 24 newborns had a SARS-CoV-2 testing of throat swab samples, and all showed negative for the RT-PCR testing of SARS-CoV-2. Among these, one preterm newborn, born to mother with pPROM, showed elevated IgG and Ig M level for SARS-CoV-2 2-hour after the birth, but negative for repeated RT-PCR testing (twice) of the swab samples （one collected immediately after birth and the other sampling along with the blood drawing

for serum antibody test of SARS-CoV-2). Additionally, besides the highly suspected SARS-CoV-2 infected newborn, another three infants with a chest X-ray after birth showed slightly inflammatory changes.

After their discharge, a telephone follow-up was conducted on the 23 newborns with unavailable testing results or negative for pathogen detection of SARS-CoV-2**.** All infants did not show signs of infection and remain healthy until this paper submission date.

DISCUSSION

As of April 16, the coronavirus cases have surpassed 2 million around the world (Johns Hopkins University and Medicine in Baltimore, Maryland, Coronavirus Resource Center), though cases in mainland China are beginning to decrease. Pregnant women bear a high risk to develop severe pneumonia due to the physiologic and immunologic changes during pregnancy.[8] This has been evident historically during previous epidemics of the virus from the same family of COVID-19 – severe acute respiratory syndrome (SARS) and middle east respiratory syndrome (MERS) and other viral respiratory infections.[14]

The majority of mothers in this study presented no-serious illness, although co-morbid conditions and obstetrical complications such as preeclampsia, gestational diabetes, hypothyroidism, dysfunction of blood coagulation etc. presented in some of the women. One pregnant woman with COVID-19 showed severe pneumonia. All mothers were discharged without major complications. Up to now, there was one case of maternal Intensive Care Unit (ICU) admission and no maternal death was reported in China.[10,15] The clinical manifestation, complications, and treatments in this study were similar to earlier published studies in the

same population.[16-18] The clinical observations were further validated by the recent study by Thevarajan I et al[19] of the immune responses of a female patient with mild-to-moderate COVID-19, which indicated that the immune responses to the newly emerged virus SARS-CoV-2 was similar to that of the avian H7N9 disease. Early adaptive immune responses might correlate with better clinical outcomes.[19]

Notably, our study has revealed that pregnant women with COVID-19 infection in the third-trimester more easily presented with laboratory testing abnormalities than those pregnant women infected with COVID-19 in their first trimester. Studies in non-pregnant adult patients with COVID-19 have showed that more prominent abnormal laboratory results were found in severe cases and were important risk indicators for the clinical outcome.[1, 20, 21] Whether late pregnant women were at a higher risk for developing severe disease than those early pregnant patients is not conclusive due to limited information on the pregnant patients at earlier gestations. Future studies are needed to address this subject.

One newborn, born to the mother with pPROM, was clinically diagnosed with SARS-CoV-2 infection, though repeated RT-PCR testing for SARS-COV-2 was negative. The newborn was delivered by urgent cesarean at the gestational week 30 plus 6 days in our hospital (March 19, 2020). She had shortness of breath at birth and suspected with SARS-CoV-2 infection. The newborn was isolated without physical contact with the mother after her birth. Then, she was transferred to Wuhan Women and Children Health Hospital (designated medical center for COVID-19 pregnant women and the newborns) immediately and was reported to have elevated IgM level of SARS-CoV-2 2-hour after her birth. Mother of the newborn was still hospitalized in our hospital after the delivery. The mother presented with

bilateral pulmonary lesions and elevated IgG and IgM level of SARS-CoV-2, while RT-PCR testing on her nasopharyngeal swab was negative (tested twice). Particularly, the mother had PROM at 30th gestational week, 7 days before the delivery, which indicated that the fetus has been exposed for 7 days without the protection of the amniotic membrane. One can easily assumed that the intrauterine COVID-19 infection in this particular case most probably had occurred in the period between membrane rupture and birth. In cases of pPROM, the medical decision of delivery is more complicated. It is not clear if intervening early is better than waiting for birth to occur spontaneously. Fortunately, the infected newborn discharged without major complications 29 days after her birth (April 17, 2020), with the antibody testing of SARS-CoV-2 turning negative. Nonetheless, our observation has suggested that more efforts should be taken to reduce the occurrence of serious pathological events in these particular patients.

Intrauterine transmission is one of the most serious complications of viral diseases occurring during pregnancy. There was no case of vertical transmission identified among pregnant women infected with other coronavirus infections – SARS and MERS during the epidemics.[14] Early in the epidemic of SARS-CoV-2, there were three cases of neonatal infection reported.[22, 23] On March 26, two articles reported neonatal infection in JAMA from separate research teams in China,[24, 25] they presented 3 newborns with an elevated IgM antibody values in blood drawn from the neonates following birth, which suggested possible vertical transmission of SARS-CoV-2. However, similar to our study, repeated nucleic acid test of SARS-CoV-2 on nasopharyngeal samples from the three infants were negative. Whether SARS-CoV-2 can be transmitted from a pregnant woman to her fetus, warrant more

evidences, and the mechanism(s) merit further study.

Except for this particular case, no serious case and neonatal death was observed among our studied cohort of neonates. However, Zaigham M et al.[10] analyzed the perinatal outcome of 108 infected pregnancies among the available literatures, one case of intrauterine fetal death and one case of neonatal death were found. In light of these findings, severe perinatal morbidity as a result of mother with COVID-19 cannot be ruled out.

CONCLUSIONS

We acknowledge that this study has some limitations due to the retrospective method employed here. One limitation is that no direct testing of intrauterine tissue samples such as amniotic fluid, cord blood, or placenta was done to confirm the intrauterine transmission of COVID-19 infection in the neonate.

Collectively, data addressing in our study would improve our understanding the effects of this newly-emerged coronavirus on pregnant women and their infants. No maternal and neonatal death occurred. Perinatal infection was observed in one case born to mother with COVID-19. It remains to be seen which factors may modulate maternal and perinatal outcomes during the global COVID-19 epidemic. Additional research on the immune response in relation to the clinical characteristic, as well as the mechanisms of vertical transmission is necessary.

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Table 1. Characteristics of 23 late pregnant women with COVID-19 and their infants.

Cases	All patients in the third trimester (N=23)	Case 21 (Severe case)	Case 22 (Twin gestation)	Case 23 (pPROM)
Maternal age (years)	Varies from 21 to 40 years with mean age of 29.91± 3.61 years	28	26	39
Gestational age at delivery	Varies from 30 weeks and 6 days up to 40 weeks with median of 38.0 (37.3-39.1) weeks	38 weeks and 5 days	37 weeks and 2 days	30 weeks and 6 days
Co-morbid disease	Virus hepatitis (2 cases), schistosomiasis (1 case)	Virus hepatitis	none	none
Complications in gestation	Gestational diabetes (3 cases), Dysfunction of blood coagulation (3 cases), Hypothyroid (2 cases), Gestational hypertension (2 cases), severe preeclampsia (1 case), Hypoproteinemia (1 case)	Disfunction of blood coagulation	none	Gestational diabetes

Table 1. Characteristics of 23 late pregnant women with COVID-19 and their infants (Cont.).

Initial symptom(s)	Fever (11 cases), cough (9 cases), vomiting (1 case)	No symptom	Fever	Fever, cough
Symptom to delivery interval	Varies from 1 day to 20 days	2 days	2 days	7 days
Maternal nucleic acid test (rt-PCR) for SARS-CoV-2	Positive (11), Negative (12)	Positive	Positive	Negative
Maternal serologic testing for SARS-CoV-2	Ig G positive (6 cases), No tested (17 cases)	Not tested	Not tested	Ig G (+)
Delivery mode	Cesarean section (18 cases); Vaginal (5 cases)	Vaginal	Cesarean section twin	Cesarean section
Birthweight (g)	Varies from 1500 to 3750 grams with mean of 3290 ±297g	3370	2350/2620	1500
Apgars at 1 & 5 mins	9,10	10,10	10, 10	4,7

Table 1. Characteristics of 23 late pregnant women with COVID-19 and their infants (Cont.).

Neonatal outcome	Premature delivery (1 case), Low birthweight (<2500 g) (2 cases), Severe neonatal asphyxia (1 case)	Normal	Low birthweight	Severe neonatal asphyxia
Neonatal nucleic acid test (rt-PCR) for SARS-CoV-2	Negative (23 cases), Positive (0 case), not tested (1 case)	Negative	Negative	Negative
Neonatal serologic testing for SARS-CoV-2	Ig G and IgM Positive (1 case), not tested (23 cases)	Not tested	Not tested	IgG (+) IgM(+)

pPROM indicate preterm premature rupture of fetal membranes; rt-PCR, reverse transcriptase polymerase chain reaction

Table 2. Radiologic and laboratory findings of pregnant women with COVID-19.

	All patients (n=27)	Confirmed cases VS suspected cases			Early pregnancies VS late pregnancies		
		Confirmed cases (n=19)	Clinical diagnosed cases (n=8)	*P*	Patients in the first trimester (n=4)	Patients in the third trimester (n=23)	*P*
Radiologic finding							
Abnormalities on chest CT – No./total No. (%)	26/27 (96.3%)	18/19 (94.7%)	8/8 (100%)	>.99	4/4 (100%)	22/23 (95.7%)	>.99
Bilateral patchy shadowing	19/27 (70.4%)	14/19(73.7%)	5/8(62.5%)	.66	2/4 (50.0%)	17/23 (73.9%)	.29
Unilateral patchy shadowing	7/27 (25.9%)	4/19 (21.1%)	3/8 (37.5%)		2/4 (50.0%)	5/23 (21.7%)	
Laboratory finding							

Table 2. Radiologic and laboratory findings of pregnant women with COVID-19 (Cont.).

White blood cell count	9.52 (6.2-11.22)	10.24(4.69-11.7)	8.41 (6.63-10.97)	.83	5.2(3.28-12.19)	10.23 (6.58-11.22)	.20
(× 10^9 cells per L)							
<4	4/27 (14.8%)	4/19 (21.1%)	0/8 (0)	.61	2/4 (50.0%)	2/23 (8.6%)	.12
>10	14/27 (51.9%)	10/19 (52.6%)	3/8 (37.5%)		1/4 (25.0%)	13/23 (56.5%)	
Lymphocyte count, × 10^9 per L	1.19 (0.86-1.46)	1.13 (0.79-1.44)	1.35 (1.17-1.58)	.22	1.83（1.25-2.16）	1.18（0.82-1.42）	.03
≥ 1 to < 1.5	14/27 (51.9%)	9/19 (47.4%)	5/8 (62.5%)	.62	1/4 (25.0%)	13/23 (60.9%)	.013
< 1	8/27 (29.6%))	7/19 (36.8%)	1/8 (12.5%)		0/4 (0)	8/23 (34.8%)	
Platelet count, ≤150× 10^9 per L– No.,%	3/4 (75.0%)	1/2 (50.0%)	2/2（100.0%）	>.99	NA	3/4 (75.0%)	NA
D-dimer, mg/L	2.74 (0.21-4.99)	2.85 (1.30-6.81)	2.74 (1.59-3.62)	.74	0.80 (0.23-1.17)	3.62 (1.88-3.63)	.003
≥ 0.5 To <1	2/23 (8.7%)	1/19	1/8（12.5%）	.86	2/4 (50.0%)	0/19(0)	.002
≥1 To <3	10/23 (43.5%)	6/19 (31.6%)	4/8 (50.0%)		1/4 (25.0%)	9/19 (47.4%)	

Table 2. Radiologic and laboratory findings of pregnant women with COVID-19 (Cont.).

≥3	10/23 (43.5%)	8/19 (42.1%)	2/8（25.0%）		0/4 (0)	10/19 (52.6%)	
C-reactive protein concentration, mg/L	20.3 (8.1-52.7)	2.40 (0.99-5.27)	1.38 (0.42-4.71)	.40	9.8(2.55-13.97)	24.0（8.13-53.35）	.08
≥10	19/26 (73.1%)	14/18（77.8%）	5/8（62.5%）	.64	2/4 (50.0%)	17/22 (77.2%)	.29
Procalcitonin level, ng/ml	0.07 (0.05-0.17)	0.06 (0.05-0.16)	0.08 (0.06-0.28)	.35	0.04(0.04-0.04)	0.12（0.05-0.18）	.05
≥0.1 to <0.5	9/21 (42.9%)	6/15（40.0%）	3/6（50.0%）	.66	0/2 (0)	9/19 (47.4%)	.21
≥0.5	2/21 (9.5)	1/15（6.7%）	1/6（16.7%）		0/2 (0)	2/19 (10.5%)	
Lactose dehydrogenase ≥250 U/liter– No.,%	4/23 (17.4%)	3/16（18.8%）	1/7（14.3%）	>.99	1/3 (33.3)	3/20 (15.0%)	.45
Aspartate aminotransferase > 40 U/liter – No.,%	2/27 (7.4%)	2/19（10.5%）	0/8（0）	>.99	0/4 (0)	2/23 (8.7%)	>.99

Table 2. Radiologic and laboratory findings of pregnant women with COVID-19 (Cont.).

Alanine aminotransferase >40 U/liter – No.,%	2/27 (7.4%)	2/19 (10.5%)	0/8 (0)	>.99	0/4 (0)	2/23 (8.7%)	>.99
Creatinine ≥ 133 μmol/liter– No.,%	0/19 (0)	0/19 (0)	0/8 (0)	>.99	0/4 (0)	0/23 (0)	>.99

NA indicates not available; CT, computed tomography