Research Article

Clinical Profile of Pregnant Women with COVID-19 Hospitalized in Regional Referral Hospital

Profil Ibu Hamil dengan COVID-19 yang Dirawat di Rumah Sakit Rujukan

Juminten Saimin[1], Steven Ridwan[1], Irawaty[2], Arimaswati[2], Sadly Salman[3], Wawan Hermawan[3]

[1]*Department of Obstetrics and Gynecology*
[2]*Department of Biomedicine*
Faculty of Medicine Universitas Halu Oleo, Kendari
[3]*Department of Obstetrics and Gynecology*
Bau-Bau Regional Hospital

Abstract

Objective: To determine the clinical profile of pregnant women with COVID-19 who hospitalized in a referral hospital.

Methods: This was a descriptive study conducted on pregnant women with COVID-19 who were hospitalized at Regional Hospital of Bau-Bau and Bahteramas Hospital in Southeast Sulawesi from May to July 2020. The confirmation of COVID-19 was based on RT-PCR. Data including characteristics, clinical profile, laboratory test, imaging, management, and outcomes.

Results: There were 41 pregnant women with COVID-19 and no maternal death cases. Maternal age was approximately 19 to 39 years, had middle education levels, and was a housewife. Most of them did not know their closed contacts, had no comorbidities, and referrals from other hospitals. They were 3rd-trimester and hospitalized with complaints related to pregnancy. Only 3 cases had complaints related to COVID-19, namely fever and cough. The majority of laboratory tests were leucocytosis. Chest X-ray shows bronchopneumonia, pneumonia, and normal imaging. Obstetrics management was performed according to the condition of the mother and fetus, including dilatation and curretage vaginal delivery, cesarean section, and curettage. The treatment was using broad-spectrum antibiotics and antiviral. Adverse pregnancy outcome were miscarriage, fetal distress, LBW, and asphyxia.

Conclusions: Pregnant women with COVID-19 have mild or asymptomatic symptoms, hospitalized with complaints related to their pregnancy, and treatment according to the condition of the mother and fetus. There are no maternal complications, while fetal complications are not clear.

Keywords: COVID-19, pregnant women, referral hospital.

Abstrak

Tujuan: Mengetahui gambaran klinis ibu hamil dengan COVID-19 yang masuk di rumah sakit rujukan COVID-19.

Metode: Penelitian ini bersifat deskriptif yang dilakukan pada ibu hamil dengan COVID-19 yang dirawat di rumah sakit rujukan di Sulawesi Tenggara, yaitu RSUD Bau-Bau dan RSU Bahteramas di Kendari, pada bulan Mei sampai Juli 2020. Konfirmasi positif COVID-19 berdasarkan hasil pemeriksaan RT-PCR. Data berupa karakteristik, gambaran klinis, pemeriksaan penunjang, penatalaksanaan, dan luaran.

Hasil: Terdapat 41 ibu hamil dengan COVID-19 dan tidak ada kasus kematian ibu. Usia ibu berkisar 19-39 tahun, tingkat pendidikan menengah, dan sebagai ibu rumah tangga. Sebagian besar kasus pada trimester-3, tidak tahu memiliki kontak erat, tidak memiliki komorbid, dan rujukan dari RS lain. Sebagian besar dirawat dengan keluhan terkait kehamilannya dan hanya 3 kasus dengan keluhan terkait COVID-19, yaitu demam dan batuk. Pemeriksaan laboratorium menunjukkan lekositosis. Gambaran foto toraks menunjukkan bronkopneumonia, pneumonia, dan normal. Tindakan obstetri dilakukan atas indikasi ibu dan janin, yaitu persalinan normal, seksio sesarea, dan kuretase. Terapi yang digunakan adalah antibiotik spektrum luas dan antivirus. Komplikasi pada janin/bayi berupa abortus, gawat janin, BBLR, dan asfiksia.

Kesimpulan: Ibu hamil dengan COVID-19 memiliki gejala ringan atau asimtomatik, dirawat dengan keluhan terkait kehamilannya, dan dilakukan tindakan obstetri sesuai dengan indikasi ibu dan janin. Tidak ada komplikasi pada ibu, sedangkan komplikasi pada bayi belum jelas.

Kata kunci: COVID-19, ibu hamil, rumah sakit rujukan.

INTRODUCTION

Corona virus Disease 2019 (COVID-19) is a new disease in humans.[1] Increasing the number of COVID-19 cases in Indonesia is taking quickly.[2] Currently, the spread of COVID-19 has reached all provinces in Indonesia, with an increasing number of cases and/or deaths.[3]

Coronaviruses are a large family of viruses that cause illness with mild to severe symptoms. Most at risk of contracting this disease are people who have close contact with COVID-19 patients, including those who treat COVID-19 patients. Several groups susceptible to being infected with COVID-19 are the elderly, children, and pregnant women.[1,2]

Pandemic has affected political, social, economic, public welfare, and culture in Indonesia, including affect anxiety in pregnant women.[3,4] Knowledge about COVID-19 infection in pregnancy and the fetus is still limited, and there are no recommendations issued by the World Health Organization (WHO) for handling pregnant women with COVID-19. It is suspected that pregnant women with co-morbid have a higher risk of experiencing COVID-19 with severe symptoms, morbidity, and mortality compared to the general population. The fetal side effect of preterm delivery is also unclear whether it related to infection in the mother.[3]

Therefore, this study aims to evaluate the pregnant women with COVID-19 who hospitalized in regional referral hospitals. This data can provide information to physicians about differences and variations in the clinical profile of pregnant women with COVID-19.

METHODS

This was a descriptive study conducted on pregnant women with COVID-19 who admitted to referral hospitals in Southeast Sulawesi, Regional Hospital of Bau-Bau and Bahteramas Hospital, from May to July 2020. Positive confirmation of COVID-19 based on the real-time reverse transcription-polymerase chain reaction (RT-PCR) assay, which was the current gold standard for detecting SARS-CoV-2 from respiratory specimens in suspected COVID-19 patients.

The inclusion criteria were pregnant women who confirmed positive for COVID-19 and had complete data. The data were filled in and reported by their doctor, including characteristics, clinical features, laboratory tests, imaging, management, and outcomes of maternal and infant. The characteristics of respondents comprised age, education, occupation, gravida, gestational age, history of close contact with COVID-19 patients, co-morbid, and referral. The clinical features including symptoms and signs related to pregnancy and related to COVID-19. The laboratory tests comprise hemoglobin levels, leucocytes, and platelets count. Imaging was performed with a chest X-ray. Management comprised treatment and drug administration. The infant outcome includes birth weight and the complication of the baby.

Statistical analysis used SPSS for windows Version-23 and was presented as frequency and percentage. The ethical clearance had approved by the Health Ethics Commission of Halu Oleo University.

RESULTS

There were 41 pregnant women who were confirmed positive for COVID-19 who admitted at referral hospitals. There was no maternal death case. All cases had good maternal outcome. There were 35 babies, 5 cases without outcome babies, and one case with a good intrauterine fetal. The characteristics of pregnant women showed in Table-1.

Table 1. Sociodemographic and Obstetrics Characteristics.

Variable	Total		Condition of the Fetus/Baby			
			Good		Asphyxia	
	n	%	n	%	n	%
Age						
< 20	2	4.9	2	4.9	0	0
21-25	6	14.6	4	9.8	2	4.9
26-30	14	34.1	11	26.8	3	7.3
31-35	10	24.4	5	12.2	2	4.9
> 35	9	22.0	7	17.1	0	0
Education level						
Low	3	7.3	0	0	1	24
Middle	23	56.1	18	43.9	4	9.8
High	15	36.6	11	26.8	2	4.9
Occupation						
Housewife	29	70.7	19	46.3	6	14.6
Employees	10	24.4	8	19.5	1	2.4
Self employees	2	4.9	2	4.9	0	0
Gravida						
Primigravida	12	29.3	9	22.0	2	4.9
Multigravida	29	70.7	20	48.8	5	12.2
Gestational Age						
Trimester-1	5	12.2	0	0	0	0
Trimester-2	0	0	1	2.4	0	0
Trimester-3	36	87.8	28	68.3	7	17.1
Close Contact						
Yes	2	4.9	1	2.4	0	0
Unknown	39	95.1	25	68.3	7	17.1
Co-mobid						
Hypertension	1	2.4	1	2.4	0	0
None	40	97.6	25	68.3	7	17.1
Referral						
Primary health centre	11	26.8	8	19.5	2	4.9
Other hospital	18	43.9	12	29.3	3	7.3
Doctor's clinic	4	9.8	4	9.8	0	0
Wihout a reference	8	19.5	5	12.2	5	49

Table 2. Clinical Features, Laboratory Test, and Imaging

Variable	Total		Condition of the Fetus/Baby			
			Good		Asphyxia	
	n	%	n	%	n	%
Complaints related to pregnancy						
Contractions	25	61.0	20	48.8	5	12.2
Leakage of fluid from the vagina	3	.3	2	4.9	0	0
Bleeding	5	12.2	1	2.4	0	0
None	8	19.5	6	14.6	2	4.9
Complaints related to COVID-19						
Fever	3	7.3	2	4.9	1	2.4
Cough	3	7.3	2	4.9	1	2.4
Dispneu	0	0	0	0	0	0
Haemoglobin levels						
<8	5	12.2	3	7.3	2	4.9
8-10	10	24.4	8	19.5	2	4.9
>10	26	63.4	18	43.9	3	7.3
Leukocyte						
<10	11	26.8	7	17.1	2	4.9
10-15	30	73.2	15	36.6	3	7.3
Platelets count						
Normal	41	100.0	29	70.7	7	17.1
Abnormal	0	0	0	0	0	0
Chest X-ray						
Pneumonia	2	4.9	1	2.4	1	2.4
Bronchopneumonia	1	2.4	0	0	1	2.4
Normal	1	2.4	1	2.4	0	0

Table 1 showed that the range of women ages was 19 to 39 years, and the majority was 26-30 years (34.1%). Most pregnant women were middle education levels (56.1%) and work as housewives (70.7%).

The COVID-19 cases were distributed in primigravida (29.3%) and multigravida (70.7%). Most of them were in the 3rd trimester (87.8%). Most pregnant women did not know the history of close contact, only 2 cases with close contact. Most of them were without comorbid, only 1 case with hypertension as comorbid. Most pregnant women have a referral from other hospitals (43.9%), primary health centers (26.8%), and doctor's clinic (9.8%). However, there were 19.5% cases without a reference.

Most of the complaints of pregnant women with COVID-19 were related to their pregnancy, including labor (68.3%) and bleeding (12.2%). However, there were 19.5% of cases had no complaints. Pregnant women with symptoms of COVID-19 were only 3 cases. They experienced fever, malaise, myalgia, and cough. There was none experienced shortness of breath.

Laboratory tests showed that most hemoglobin levels were> 10 g% (63.4%), had leukocytosis (73.2%), and the platelet count was normal in all cases. There were 4 cases with chest X-ray, comprise pneumonia (4.9%), bronchopneumonia (2.9%), and normal (2.9%).

Table 3. Management and Infant Outcomes

Variable	Total		Condition of the Fetus/Baby			
			Good		Asphyxia	
	n	%	n	%	n	%
Treatment						
Dilatation and Curettage	5	12.5	0	0	0	0
Vaginal delivery	19	47.5	14	34.1	5	12.2
Caesarean section	16	40.0	14	34.1	2	4.9
Drug administration						
Antibiotic	36	87.8	27	65.9	5	12.2
Anti virus	5	12.2	2	4.9	2	4.9
Birth weight						
<2500	3	8.6	1	2.4	2	4.9
2500-4000	29	82.8	25	61.0	4	9.8
>4000	3	8.6	2	4.9	1	2.4
Complication of infant						
Misscarirage	5	12.2	0	0	0	0
Fetal distress	2	4.9	0	0	2	4.9
Low birth weight	3	7.3	1	2.4	2	4.9
Asphyxia	7	17.1	0	0	7	17.1

Treatment was based on the indications of the mother and the fetus comprises dilatation and curettage(12.5%), vaginal delivery (47.5%), cesarean section (40.0%), and curettage (12.5%). Therapy in this study was using broad-spectrum antibiotics (87.8%) and anti-virus (12.2%). There were no maternal complications. Most of the birth weight was 2500-4000 (82.8%). The complications in the fetus were misscarriage (12.2%), fetal distress (4.9%), LBW (7.3%), and asphyxia (17.1%).

DISCUSSION

There was no death case of pregnant women with positive COVID-19 in this study. A study in the elderly found the number of death cases was 23%.[5] This was increasing evidence that some COVID-19 patients have mild symptoms. However, the absence of symptoms can make it difficult for detecting an asymptomatic infection.[6] About 80% of COVID-19 infections are mild or asymptomatic; 15% severe, require supplemental oxygen; and 5% critical, requiring mechanical ventilation.[1] Outcomes of maternal with COVID-19 appear to be better than SARS and MERS. The case fatality rate for COVID-19, SARS, and MERS was 0%, 18%, and 25%, respectively. The most common causes of death in SARS and MERS were progressive respiratory failure and severe sepsis.[7-9]

Positive cases of COVID-19 in this study were found in all gravida and most of them in the third trimester. This was similar to other studies which found that most pregnant women contracted COVID-19 in the third trimester.[7] Almost all cases did not know the history of close contact with COVID-19 patients. They were diagnosed on admission with a rapid test followed by RT-PCR of an oropharyngeal swab. They were hospitalized with complaints related to their pregnancy and had referral letters from other hospitals, primary health centers, and doctors' clinics. Some of them had not a referral letter. It must be attention, that we must implement health protocols to prevent transmission because people without symptoms have the potential to transmit the virus. The COVID-19 can transmit through coughing/ sneezing droplets. Most at risk of contracting this disease were people who have close contact with COVID-19 patients, including those caring for COVID-19 patients.[1,2]

Fever, malaise, myalgia, and cough were symptoms of COVID-19 found in this study. There were no pregnant women who experienced shortness of breath. The clinical signs and symptoms of COVID-19 in most cases were fever, and some cases have difficulty breathing.[2] About 50% of elderly patients hospitalized with COVID-19 showed the classic symptoms of COVID-19, including fever, cough, and shortness of breath.[5] Fever and cough were most symptoms of COVID-19 in both elderly and non-elderly patients.[10] Changes in the immune and cardiorespiratory systems during pregnancy affected the susceptibility of pregnant women to severe infections and hypoxic disorders.[11]

In this study, we found leukocytosis and platelet counts were normal, different from other studies that found leucocytosis, lymphopenia, and thrombocytopenia.[7] The chest X-ray was pneumonia, bronchopneumonia, and normal. In most cases, the chest X-rays show pneumonia infiltrate in both lungs.[2] Chest imaging can help diagnose COVID-19, but do not replace molecular confirmation of COVID-19. Chest imaging is nonspecific and appears similar in pregnancy.[8,12]

Treatment of pregnant women with COVID-19 in this study based on maternal and fetal indications, including curettage, vaginal delivery, and cesarean section. Obstetric and clinical factors were to determine the decision of therapy. There is no conclusive evidence of vertical transmission, so vaginal delivery did not contraindicate in patients with COVID-19.[12] In emergency conditions, the cesarean section is carried out with caution, using complete

personal protective equipment and in the room with negative pressure ventilation.[7,13]

Broad-spectrum antibiotics and anti-viruses were given to the patients in this study. A recent study has identified remdesivir and chloroquine as strong candidate drugs to treat COVID-19.[14] Remdesivir is a new widely acting nucleotide antiviral drug that inhibits the in vitro replication of SARS-CoV-2 and related coronaviruses, including the novel coronavirus 2019-nCov.[15] Its use appears to be safe in pregnant women and phase 3 trials testing the efficacy of COVID-19 are currently underway in the United States and China. In a study with SARS patients, all patients were given broad-spectrum antibiotics, beta-lactams, and macrolide or fluoroquinolone.[8]

There were no maternal complications in this study. Abortions, fetal distress, LBW, and asphyxia were found, but it is not clear whether this is a complication of COVID-19 infection. SARS during pregnancy is associated with high incidences of spontaneous miscarriage, preterm delivery, and intrauterine growth restriction. There is no evidence of SARS infection among newborns to these mothers.[8] There is no data that the increased risk of abortion associated with COVID-19 and it is also unclear whether COVID-19 infection can pass the transplacental route to the baby.[3]

CONCLUSION

Based on the results, we conclude that pregnant women with COVID-19 have mild or asymptomatic symptoms, hospitalized with signs and symptoms related to their pregnancy, and the management performed according to the mother and fetus indications. There are no maternal complications, and complications of the baby are not clear. Further research needs to be done with larger sample size and more complete variables.

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