4'TH INTERNATIONAL CONFERENCE
ON HEALTH PRACTISE AND RESEARCH
"Prevention, detection, and treatment of cardiovascular disease"

Journalhomepage: https://ojs.stikestelogorejo.ac.id/index.php/ichpr

Restrospective: Pregnancy Outcomes Who Have Been Exposed Covid19

Riesahatul Lailly Zaenatul Afiza [a], Rinda Intan Sari [b], Sri Puguh Kristiyawati [b], Anis Ardiyanti [b]

[a]Nurse Profession Study Program STIKES Telogorejo Semarang, Central Java, Indonesia
[b]Lecture of Nursing Program STIKES Telogorejo Semarang, Central Java, Indonesia

ARTICLEINFO

Articlehistory:
Received00January2023
Accepted00February2023

Keywords:
Covid-19, Pregnant women, Newborn outcomes

ABSTRACT

Covid-19 is a highly contagious disease, including pregnant women during the pandemic. This has an impact on pregnant women and the outcome of newborns, especially for pregnant women who have been exposed to Covid-19. This study aims to determine the characteristics of mothers who have been exposed to the condition of newborns. The research design uses a quantitative approach with a retrospective approach from mothers who have been exposed to the Covid-19 method. Inclusion criteria for pregnant women in the third trimester, positive RT-PCR test. The number of samples were 242 respondents. The variables tested were maternal age and parity, infant birth weight and birth age. Most of the respondents were aged 20-35 years, multipara and most were born with normal weight. There are no babies who have been confirmed positive for Covid-19. This study shows that the characteristics of mothers who have been exposed to the condition of newborns are interrelated between the age of the mother and the age of the baby (p value is 0.049), the other variables are not related. This study explains that Covid19 does not necessarily affect infant outcomes and can improve the quality of life of pregnant women exposed to Covid19.

INTRODUCTION

In Indonesia, Covid-19 patients from January to November 2021 reached 4,256,687 people (RI Ministry of Health, 2021). The incubation period for the Covid-19 virus ranges from 6-14 days with an average of 14 days (Ibrahim & Berhimpon, 2021). The Covid-19 case causes various manifestations, one of which is in the respiratory system which experiences dry cough and shortness of breath, from the results of a chest photo it shows abnormalities in the lungs. Besides that, fever, diarrhea and lymphopenia can occur (Amorita & Santosa, 2021).

Covid-19 can attack all age groups, including vulnerable groups, namely pregnant women. Pregnant women are more susceptible to being infected with Covid-19 compared to women who are not pregnant. POGI data shows that 13.7% of pregnant women are

* Corresponding author: Phone +6285728151533
e-mail address: rinda@stikestelogorejo.ac.id

more susceptible to infection with Covid-19 compared to women who are not pregnant. In Indonesia, between April 2020 and April 2021, there were 536 confirmed pregnant women with a mortality rate of 3%. Around 72% of mothers are exposed to Covid-19 at 37 weeks of gestation. Around 51.9% of confirmed Covid-19 mothers fall into the category of People Without Symptoms (OTG), deaths from complications of Covid-19 3% and intensive care for pregnant women 4.5% (Januarto, 2021).

From data from the Indonesian Ministry of Health, Central Java Province is the province with the third most cases of Covid-19 in Indonesia with the number of cases reaching 483,621 (11.4%) cases. Semarang health office data for 2021 in January-August recorded 639 pregnant women exposed to Covid-19 and 192 toddlers exposed to Covid-19 during the same period (Hakam, 2021).

This condition occurs due to physiological changes in the body which can decrease the immune and cardiopulmonary systems (Qalaba & Wardana, 2021). This is in accordance with Nurdianto's research, et al (2020) physiological changes and decreased body immunity in pregnant women. Mothers with confirmed Covid-19 also experience morphological changes in the placental fluid which results in the fetus not being able to grow and develop in the mother's womb (Chen, et al, 2020). Covid-19 in pregnant women can endanger the condition of the mother and premature baby, preeclampsia, cesarean section birth to perinatal death (Amorita & Syahriati, 2021).

Ramadhani's research (2020), complications that can occur in the fetus are, 2% cases of miscarriage, 10% of Intrauterine Growth Restraint (IUGR) and 39% of premature births. Fever with a temperature of 38.1°C experienced by mothers is included in the common symptoms of pregnant women with Covid-19. The most dangerous condition is when the mother experiences severe respiratory tract disorders that have an impact on the condition of the mother and fetus. Pregnant women with confirmed Covid-19 have a more dangerous risk, from morbidity to death compared to the general public (Zarchi, et al (2020).

All babies born to mothers with Covid-19 will be separated from their mothers. Babies who are born will be resuscitated early and immediately isolated from the mother and family members for further observation strictly according to the health protocol for 14 days or when the baby's condition really shows the absence of the Covid-19 virus in the baby's body (Liu, et al. , 2020). The birth weight of babies from mothers confirmed with Covid-19 was 78.9% with birth weight > 2500 grams, 19.3% with birth weight 1500-2499 grams and 0.2% for neonates with birth weight <1500 grams. Of all babies born to mothers with confirmed Covid-19, 2.7% of babies died from respiratory failure, 6.4% of babies experienced aphyxia, prematurity or respiratory problems (Etika, et al, 2021).

In Sharma, et al (2021) 44 babies born to mothers with confirmed Covid-19 in Indian hospitals had a low birth weight of 29.5%, premature babies 54.6%, babies APGAR scores <7 11.4% and 13.6% of babies experienced aphyxia so they were in the NICU. This is in accordance with the research of Yang, Wang & Liu (2020) as many as 84 babies were born at the Chengdu Jinjiang maternity and child health hospital, China. The number of cases of stillbirth (1.2%) and neonatal death (1.2%) was obtained. From the description of the data above, the aim of this study is to analyze the relationship between the characteristics of mothers who have been exposed to Covid-19 to the condition of newborns.

METHODS

This research is a quantitative study using a retrospective method through medical records. The population in this study was all medical record data for third trimester pregnant women who were exposed to Covid-19 at the KRMT Wongsonegoro Hospital Semarang (January 2020 to August 2021). In this

* Corresponding author: Phone +6285728151533
e-mail address: rinda@stikestelogorejo.ac.id

study, the characteristics of mothers who had been exposed to Covid-19 were mother's age, mother's parity, baby's birth weight and birth age using the Consecutive Sampling technique as a research sample. The number of samples obtained in this study were 242 respondents. The data collection tool was carried out using observation sheets for mothers and babies exposed to Covid-19.

RESULTS AND DISCUSSION

Frequency Distribution of Pregnant Women Exposed to Covid-19 and Newborns (n=242)

Variable	(f)	(%)
Age		
a. At-risk age (<20 and >36 years)	61	25,2
b. Age Not At Risk	181	74.8
Parity		
a. Primigravida	71	29,3
b. Multigravida	171	70,7
Birth WeightBaby		
a. LBW	108	44,6
b. Not LBW	134	55,4
Birth Age Baby		
a. Premature	64	26,4
b. Not Premature	178	73,6

Relationship between mother's age and baby's birth weight

Mother's Age	Birth WeightBaby				Total		p-values	OR
	LBW		Not LBW					
	f	%	f	%	f	%		
UB	31	12,8	30	12,4	61	25,2	0.261	1,396
UTB	77	31.8	104	43.0	181	74.8		
Total	108	44,6	134	55,4	242	100		

Note: UB: Age at Risk and UTB: Age Not at Risk

The results of this study are in line with Silvia, Rahayu & Basit (2015) which states that pregnant women aged 20-35 years are the best age for women to get pregnant and give birth both in terms of maternal health, physical, emotional, mental and reproductive organs. Biologically, it is recommended that women conceive at childbearing age, namely 20-35 years, because pregnant women have more energy at reproductive age and neonatal death rarely occurs in women aged 20-35 years.

The results of this study are in line with Khoiriah (2017) pregnant women aged less than 20 years have not optimal development of their reproductive organs and physiological functions. In addition, the emotions and psychology are not mature enough so that during pregnancy the mother cannot respond perfectly to her pregnancy and complications often occur. At the age of> 35 years is also not recommended, given the age often appear diseases such as hypertension, diabetes mellitus, benign tumors and other degenerative diseases. In the delivery process, pregnancies aged > 35 years will face difficulties due to weak uterine contractions and abnormalities in the mid-pelvic bones.

The results of the Chi Square test for the relationship between maternal age and baby's birth weight showed that there was no relationship between maternal age and baby's birth weight at KRMT Wongsonegoro General Hospital, Semarang. The Odd Ratio Test with Risk Estimate yielded a result of 1,396, which means that the age of the mother at risk will potentially or have the opportunity to give birth to a LBW baby by 1,396 times compared to the age of the mother who is not at risk.

Relationship between Mother's Age and Baby's Birth Age

Mother's Age	AgeBirthBaby				Total		p-values	OR
	Premature		Not Premature					
	f	%	f	%	f	%		
UB	22	9,1	39	16,1	61	25,2	0.049	1867
UTB	42	17,4	139	57,4	181	74.8		
Total	64	26,4	178	73,6	242	100.0		

Note: UB: Age at Risk and UTB: Age Not at Risk

Based on the table of the relationship between the characteristics of mothers who have been exposed to Covid to the condition of newborns, it shows

* Corresponding author: Phone +6285728151533
e-mail address: rinda@stikestelogorejo.ac.id

that respondents aged 20-35 were 181 respondents (74.8%) with non-premature births of 139 respondents (57.4%) and newborns premature as many as 42 respondents (17.4%).

The results of this study are in line with Adkhana, Rosyidah & Kusumasari (2019) stating that the productive age of 20-35 years is a healthy and safe age for pregnancy and childbirth. Productive age is safe in carrying out the pregnancy process because the reproductive system or reproductive cycle is regular and the reproductive organs are mature, perfect in carrying out their functions. If the age is not at risk for premature labor, it can occur because there are other factors that influence premature labor including such as the mother's physical unhealthy, smoking, history of pregnancy, health and condition of the fetus, psychological, twins, PMS, presence of infection, entangled in the umbilical cord, trauma, uterine deformity and soft cervix.

The results of the Chi Square test for the relationship between mother's age and baby's birth age show that there is a relationship between mother's age and baby's birth age. The Odd Ratio test with the Risk Estimate obtained a result of 1,867, which means that women of at-risk age have the potential or chance of experiencing premature births of 1,867 times compared to mothers of non-at-risk age.

Parity Relationship with Baby's Birth Age

Parity Mother	Birth WeightBaby				Total		p-values	OR
	LBW		No					
	f	%	f	%	f	%		
Primi	26	10,7	45	18,6	71	29,3	0.106	0.627
Multi	82	33,9	89	36,8	171	70,7		
Total	108	44,6	134	55,4	242	100.0		

Description : Primi: Primigravida and Multi : Multigravida

Based on the table of the relationship between the characteristics of mothers who have been exposed to Covid to the condition of newborns, it shows that 171 respondents (70.7%) with multigravida pregnancies had 89 respondents (36.8%) with low birth weight babies and 82 LBW babies. respondents (33.9%). This study is different from research conducted by Urrahmah & Ertiana (2020) which stated that pregnancies that are more than 3 times have a greater risk of giving birth to LBW babies because in the mother's condition the muscle cells begin to weaken and the reproductive organs have descended, besides that there is weakness in the blood vessels. especially in the mother's womb. Due to frequent pregnancies and childbirth, it will be risky to give birth to LBW babies.

Research by Tombokan & Pinontoan (2015) which states that high parity will have an impact on the emergence of various health problems for both mothers and babies who are born. Repeated pregnancies and deliveries cause damage to the blood vessels in the uterine wall and a decrease in the flexibility or elasticity of the tissues that have been stretched repeatedly during pregnancy so that abnormalities in the growth of the placenta and fetal growth tend to arise resulting in low birth weight babies. The more often pregnant women and give birth, the closer the distance between pregnancy and birth, the elasticity of the uterus is increasingly disturbed, as a result the uterus does not contract perfectly and results in post-pregnancy bleeding, premature birth and low birth weight (Novianti, Azzizah & Faturahman, 2021).

The results of the Chi Square test for the relationship between maternal parity and infant birth weight showed that there was no relationship between maternal parity and infant birth weight.

* Corresponding author: Phone +6285728151533
e-mail address: rinda@stikestelogorejo.ac.id

The Odd Ratio test with the Risk Estimate yielded a result of 0.627, which means that the parity of potential or likely mothers to give birth to LBW babies is 0.627.

Relationship between Mother's Parity and Baby's Birth Age

Parity	AgeBirthBaby				Total		p-values	OR
	Premature		Not Premature					
	f	%	f	%	f	%		
Primi	16	6,6	55	22,7	71	29,3	0.374	0.745
Multi	48	19,8	123	50,8	171	70,7		
Total	64	26,4	178	73,6	242	100.0		

Description : Primi: Primigravida and Multi : Multigravida

Based on the table of characteristics of mothers who have been exposed to Covid to the condition of newborns, it shows that 171 respondents (70.7%) have multigravid pregnancies with 123 respondents (50.8%) non-premature babies and 48 respondents (19 ,8%). This research is in line with Widiyastuti (2021) which states that multigravida mothers have readiness and maturity in knowledge of caring for pregnancy, fulfilling nutrition and vitamins because they have experience and knowledge during previous pregnancies. Mother's experience and knowledge in previous pregnancies helps mothers to learn more about the stages of pregnancy, the risks that might occur, or the complications that might arise.

The results of the Chi Square test for the relationship between maternal parity and birth age showed no relationship between maternal parity and infant birth age at KRMT Wongsonegoro General Hospital, Semarang. The Odd Ratio test with the Risk Estimate obtained a result of 0.745, which means that parity has the potential or opportunity to experience premature births of 0.745 times.

CONCLUSION

In the results of this study, from the age of the mother with the baby's birth weight, the results of the mother's age at risk will have the potential or chance of having a LBW baby by 1,396 times compared to the mother who is not at risk. premature by 1,867 times compared to mothers who are not at risk. The results of this study still need to pay attention to other variables as confounders such as complications experienced before, the effects of exposure to covid and prenatal care for each individual.

It is hoped that the results of this study can be used as material for the development of nursing science, especially regarding the prevention and treatment of Covid-19 in pregnant women who have not or have been exposed to Covid-19 by means of counseling. Future researchers should continue research on examining mothers and babies with complete blood laboratory tests that can affect the health and safety of pregnant women during the Covid-19 pandemic.

ACKNOWLEDGEMENT (if any)

-

REFERENCES

Adkhana, Dian Nur, Rosyidah, Halimah & Kusumasari, RRViantika. (2019). The Relationship between Age of Pregnant Women and Premature Childbirth at Panembahan Senopati Bantul Hospital, Yogyakarta. BMJ. Volume 6, No. 1

Amorita, NA, & Syahriati, I. (2021). Characteristics of Pregnant Women with Covid-19 Infection and Their Delivery Flow at Kasih Ibu Hospital, Surakarta. Journal of Reproductive Health. Vol8. number 1

Amorita, NA, & Santosa, MNA (2021).Covid-19PositiveNeonatesFromPregnant Women With Covid-19 in KasihIbuHospitalSurakarta.HealthyMuJournal.vol 5.No 1

* Corresponding author: Phone +6285728151533
e-mail address: rinda@stikestelogorejo.ac.id

Chen, H, GuoJ, WangC, LuoF, YuX, ZhangW, et al. Clinical Characteristics and Intraurine Vertical Transmission Potential of Covid-19 Infection in NinePregnant Women a Restorative Review ofMedicalRecordsLancet(London,England)2020 /02/12.2020:395(10226):809.15.Avilable from :https://pubmed.ncbi.nlm.gov/32151335

Grag, et al. (2020). Characteristics and Maternal and Birth Outcomes of Hospitalized Pregnant Women With Laboratory-Confirmed *Covid-19-COVID-NET,13state,March1-August22, 2020*. US Department of Health and Human Services/Centers for Disease Control and Prevention. MMWR/September 25, 2020/ Vol. 69 /No.38 accessed 18/12/2021/22.15

Hakam, MA (2021). Health Office Starts Vaccination for Pregnant Women.https://semarangkota.go.id/p/2784/dinkes_start_doing_vaccination_on_mother_hamil

Ibrahim, TM, Rambert, G., & Berhimpon, S. (2021). Overview of ALC and NLR in Trimester III Pregnant Women Confirmed Positive for SARS-COV-2 at Prof. Hospital. RD Kandal Period July-September 2020. eBiomedik. Vol 9. No1, January-July 2021.

Januarto, AK (2021). Recommendations for Handling Corona Virus (Covid-19) in Maternal (Pregnancy, Maternity & Postpartum).https://pogi.or.id

Ministry of Health of the Republic of Indonesia. Situation of Covid-19. Indonesia: 2020.https://www.kemkes.go.id

Liu, D, Li L, Wu X, Zheng D, Wang J, YangL, etal. Pregnancy and Perinatal Outcomes of Women With Coronavirus Disease(Covid-19)Pneumonia:APreliminaryAnalysisAJRAMJRoentgenol.2020.Mar: 1:1-6

RI Ministry of Health. (2021). Situation of the COVID-19 Virus in Indonesia.http://covid19.go.id/accessed 1 November2021:22.00/01/12/2021

Nurdianto, AR, Nurdianto, RF, & Febiyanti, DA (2020). Clinical Studies of Covid-19 Infection in Pregnancy with Insulin-Dependent Diabetes Mellitus (IDDM). Journal of Scientific Medicine, WijayaKusuma. 9(2): 229-244, September 2020

Prastiti, GT, Leniensi, C, Wulandari, C & Yuliantika, EV (2020). Transmission of the Covid-19 Virus from Pregnant Women to Fetuses: Systematic Literature Review. Journal OfHealth. Volume 8, No. 2

Qalaba, J., & Wardana, GA (2021). Characteristics of Obstetric Patients with Covid-19 Infection in the Wagaya Praja Room, Bali, May-December 2020 Period. Digest of Medical Science. Vol12. Number 1

Ramadhani, HS (2020). Covid-19 in Pregnancy: Is it Dangerous?. Medula. Vol10. No. 2, July 2020

Suprayitno, E, Indriyani, R, Kurniayati, EM & Kurniasari, P. (2021). Implementation of Increasing Immunity in Pregnant Women during the Covid-19 Pandemic. Permas Scientific Journal: Kendal STIKES Scientific Journal. Volume 11, No. 4

Urrahman, Syifaa & Ertiana, Dwi. (2020). Age and Parity of Mothers with Incidence and Degrees of Newborn Babies (LBW). Journal of Midwifery. Volume 12, No. 2

WorldHealthOrganization.CoronavirusDiseaseCovid-19.Vol142.WHO.Geneva.2020

Zhu N, Wang W, Li X, Yang B, Song J, et al. NovelCoronavirusfromParentswithPneumoniainChina.2019.NEngl JMed.2020/01/24.2020:382(8):727-33. Available from :https://pubmed.ncbi.nlm.nih.gov/31978945

* Corresponding author: Phone +6285728151533
e-mail address: rinda@stikestelogorejo.ac.id