Midwifery Research Journal, 176-186
Volume 1 Number 6 July 2024
URL: https://jurnal.cakrabirawamedia.com/index.php/mrj/

ISSN 3025-6364 (Print) 3025-6356 (Online)

The Current Status of Antigen Testing and FE Tablet Administration in the COVID-19 Pandemic is Affecting Third-Trimester HIV Mothers in the Mammee Primary Optical Clinic Based on Age Factors

Raffiky Pinandia Sustamy
Department of Midwifery, Universitas Kadiri, Indonesia
Email: raffikypinandia@gmail.com

ABSTRACT

Pregnant women in Indonesia had an anemia incidence of 48.9% in the Central Kalimantan region, it was 67% and in the Main Clinic of Mother Jewelry, it was 25% among TM III pregnant moms. One strategy to avoid anemia is to take supplements of iron, particularly in pregnancies that may be tracked with antenatal care exams (ANC). The purpose of this research is to ascertain how the Covid-19 pandemic's ANC regularity affects the prevalence of anemia in the third trimester of pregnancy. This study used secondary data from medical records between April 2020 and April 2021 as part of a retrospective descriptive analytical observational design. 123 expectant mothers at Mother's Jewelry Main Clinic in Trimester III served as the study's subjects.

Keywords: anemia, antenatal care (ANC), tablet Fe

BACKGROUND

Anemia in pregnancy is one of the nutritional problems that many pregnant mothers suffer in developing countries. According to the World Health Organization (WHO) in 2010, 40% of maternal deaths in developing countries are caused by anemia. Pregnancy anemia not only affects the mother, but also endangers the baby, so pregnancy anaemia is often referred to as "potential danger to mother and child". (Manuaba, 2010).

70% of pregnant women in Indonesia suffer from anemia. Data from Basic Health (Risk) Research 2013 show that the prevalence of anemia in pregnancy has increased from 24.5% in 2007 to 37% in 2013 (Kemenkes RI, 2014). Basic health (Risc) Research results in 2010 show that 80.7% of women aged 10-59 years have received Blood Supplement Tablets, but only 18% of them have taken as many as 90 tablets.

Anemia is practically defined as the hematocrit (Ht), Hb concentration, or erythrocyt count below the “normal” limit. In general, pregnant mothers are considered anemia if the hemoglobin levels are below 11 g/dl or the haematocrit is less than 33%. In routine practice, concentrations of Hb < 11 g / dl at the end of the first trimester, and 10 g /dl in the second and third trimesters are suggested to be the bottom limit for finding the causes of anemia in pregnancy. These values are approximately the same as the lowest Hb values in pregnant women who are receiving iron supplementation, i.e. 11,0 g / dL in the first Trimester and 10.5 g/ dl in the Second and Third Trimesters. (Sarwono, 2010).

The high level of anaemia that affects pregnant mothers has a negative impact on the fetus that is in the womb of the mother during pregnancy, childbirth and respiratory periods between which will be born a fetus with low birth weight (BBLR), premature partus, abortion, postpartum bleeding, old partus and shock. This is related to many factors, including nutritional status, age, education, and employment. (Sarwono, 2005).

Undernourished food intake in pregnant women, especially lack of iron, can cause iron deficiency anemia. Therefore, pregnant mothers need additional iron. One intervention that can be done to deal with anemia deficiency of iron is by giving iron (Fe tablets) to the pregnant woman. In the Regulation of the Minister of Health No.88 of 2014, the Government of Indonesia established a programme to reduce the prevalence of anaemia in pregnant mothers during pregnancy by providing 90 Fe tablets for each pregnant mother during the pregnancies. However, even though Fe tablets have been administered, the prevalence of anemia in pregnant mothers continues to rise. In the study (Amalia, Darmawati and Hermawati, 2021) it is mentioned that as much as 55.2% of pregnant women respondents have a negative attitude towards compliance in taking Fe tablets at the time of the Covid-19 pandemic. This may be because many pregnant mothers are reluctant to undertake medical examinations in pandemic situations, so the pregnant mother has limited knowledge about the benefits of Fe tablets that will be very helpful in the health of the mother and fetus during pregnancy. (Amalia, Darmawati and Hermawati, 2021).

Besides, in this Covid-19 pandemic situation, there are many restrictions on almost all routine services including maternal and newborn health care. Pregnant mothers become reluctant to puskesmas or other health care facilities for fear of becoming infected, delayed pregnancy examination (Ante-Natal Care or ANC) and pregnant mothers' classes, as well as inadequate services in terms of energy and facilities including Self-Protection Equipment. This leads to the health care of mothers and newborns becoming one of the services affected, both in access and quality. Observations of registered data from March to December 2020, in UPTD Abiansemal I show a decrease in the number of visiting pregnant mothers during the pandemic. Between March and December 2020, 347 pregnant women experienced a decrease of 8.68% from the previous year. (Wahyu Padesi, Suarniti and Sriasih, 2021).

Natalia dkk (2017) noted that there was no relationship between ANC coverage and Fe tablets with anemia prevalence in East Java (p-value > 0.05). According to him, this is due to a number of factors that influence the occurrence of anemia, such as the bioavailability of iron, and the consistency of the pregnant mother's iron intake. Similar results were also found in the study conducted by Syafti (2022), there was no relationship between regularity of antenatal care visits with anemia incidents in Kepahiang district (p>0,05). Whereas according to the study carried out by Dolang (2020), there is a significant relationship between the regulation of ANC visits (p = 0,021) and consumption of Fe tablets (p=0,000) in pregnant women in the city of Ambon. The study by Lubis dkk (2022) also showed a relationship between visiting ANC and the incidence of anemia in pregnancies with a value of p <0,001 and there was a connection between the consume of FE tablets with the occurrence of anaemia in the pregnant mothers with a rating of p<0,001. (Syafti Riche Octriza, 2022). Given the high number of pregnant mothers suffering from anemia, as well as the dangers caused by anemia for both the mother and the pregnant fetus, it is important that research be carried out on the influence of the regularity of the ANC examination and the administration of Fe tablets on the incidence of anemia in pregnant women in Trimester III at the Main Clinic of Mother Jewelry.

METHODS

This research is conducted using an observational analytical approach. The population in this study was 525 respondents with a sample of 123 respondents. The sampling technique used in this study is purposive samplings. Data analysis to see the relationship between independent variables and dependent variables using statistic chi square tests with a significant rate of p=0.05. This research has also obtained evidence of passing the ethical test.

RESULTS

Table 4. Characteristics of Respondents by Age

No	Age	f	%
1	<20 years	6	5
2	20-35 years	100	81
3	>35 years	17	14
	Amount	123	100

Based on table 4 above it is known that of 123 respondents more than half were between 20-35 years of age, which is 100 respondents (81%). While there were 17 respondents who were >35 years old (14%), the remainder were under 20 years old (5%).

Table 5. Characteristics of respondents based on pregnancy age

No	Pregnancy Age (trimester III)	f	%
1	Early (28-31 minggu)	56	46
2	Middle (32-35 minggu)	37	30
3	End (36-40 minggu)	30	24
	Amount	123	100

Based on table 5 above it is known that the most pregnancy age of respondents found was in the early trimester III range (28-31 weeks), which was 56 people (46%), while the least pregnant age of the respondents was in 36-40 weeks, which was 30 respondents (24%).

Tabel 1. Karakteristik Variabel Keteraturan Pemeriksaan ANC

No	ANC Examination	f	%
1	Regular	**75**	**61**
2	Disorderly	48	39
	Amount	123	100

Based on table 6 above it is known that the regularity of the ANC examination obtained most of the respondents of the regular criteria, that is, as many as 75 respondents (61%).

Table 7. Characteristics of Variable Regulation of Fe Tablet Giving

No	Fe Tablet Giving	f	%
1	Regular	**64**	**52**
2	Non Regular	59	48
	Amount	123	100

Based on table 7 above it is known that the regularity of Fe tablet administration was obtained by the majority of regular criteria respondents, that is 64 respondents (52%).

Table 8. Characteristics of Anemia Incidence Variables

No	Anemia incidence	f	%
1	Anemia	42	34,1
2	Non Anemia	**81**	**65,9**
	Amount	123	100

Based on table 8 above it is known that the incidence of anemia obtained the majority of non-anemia criteria respondents, which is 81 respondents (65.9%).

Table 9. Cross tabulation of the characteristics of respondents based on age with variable characteristics based on the regularity of the ANC examination of pregnant mothers in trimester III at the Yellow Mother Clinic Basal Bun

No.	Age	ANC Examination Rules		f	%
		Regular	Non Regular		
1	15-25	20	19	39	31.7
2	26-40	55	29	84	68.3
3	Amount	75	48	123	100

Based on table 9 above it is known that the most frequently performed ANC examination was the age group 26-40 years, which is 55 respondents (44.7%).

Table 10. Cross tabulation characteristics of respondents based on age with variable characteristics based on the regularity of administration of Fe tablets to pregnant mothers of trimester III at Jelly Mother Clinic Base Bun

No.	Age	Fe Tablet Giving		f	%
		Regular	Non Regular		
1	15-25	17	22	39	31.7
2	26-40	47	37	84	68.3
3	Amount	64	59	123	100

Based on table 10 above it is known that the more regular respondents in the administration of Fe tablets were the age group 26-40 years, that is 47 respondents (38.2%).

Table 11. Cross tabulation of characteristics of respondents based on age with variable characteristics based on the incidence of anemia in pregnant mothers of trimester III at Bun Basal Mother's Jewelry Clinic

No.	Age	Anemia incidence		f	%
		Anemia	Non Anemia		
1	15-25	19	20	39	31.7
2	26-40	23	61	84	68.3
3	Amount	42	81	123	100

Based on table 11 above it was found that the most non-anemic respondents were found in the age group of 26-40 years, which was 61 respondents (49.6%).

Table 12. Cross tabulation between the regularity of the ANC examination and the incidence of anemia in pregnant mothers of the third trimester at the Jelly Mother Clinic Pbase Bun

No.	ANC Examination Rules	Kejadian Anemia		f	%
		Anemia	Non Anemia		
1	Regular	10	65	75	61.0
2	Non Regular	32	16	48	39.0
3	Amount	42	81	123	100

Table 13. Cross tabulation between the regularity of Fe tablet administration and the incidence of anemia in pregnant women of the third trimester at the Jelly Mother Clinic of Bun Base

No.	Regulation of Fe Tablet Giving	Anemia Incidence		f	%
		Anemia	Non Anemia		
1	Regular	6	58	64	52.0
2	Non Regular	36	23	59	48.0
3	Amount	42	81	123	100

Based on tables 12 and 13 above it was found that the most non-anemic respondents were found in the group that regularly performed an ANC examination, which was 65 respondents (52.8%) and the regular group in the Fe tablet administration, that was 58 respondents (47.2%).

Table 14. Chi-Square Test Regularity Relationship of the ANC Examination with the Incidence of Anemia in Pregnant Mothers of the Third Trimester at the Jade Mother Clinic Basal Bun

Chi-Square Test			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	37.023[a]	1	.000

The results of the study analysis of the relationship between the regularity of the ANC examination and the incidence of anemia in pregnant women in trimester III based on the statistical test using the Chi-Square trial obtained p = 0,000 < 0,05 then H0 was rejected and H1 received which means there is a connection between the regulation of the NC examination with the occurrence of anaemia in the pregnant mothers in trimesters III at the Clinic of Pregnant Mother Base Bun. With a correlation coefficient value of 0.481 which means that the level of the connection is in the category of sufficient relationship, where the range of the correlations value between 0.41-0,60 is included in the Category of adequate relationship. (Sugiyono, 2010).

Table 15. Results of analysis using Chi-Square Regularity of administration of Fe tablets with the incidence of anemia in pregnant women of trimester III at Bun Base Mother's Jewelry Clinic

Chi-Square Test			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	36.409[a]	1	.000

The results of the analysis of the study on the relationship between the regularity of Fe tablet administration with the incidence of anemia in pregnant women in trimester III based on statistical tests using Chi-Square test obtained p = 0,000 < 0,05 then H0 was rejected and H1 received which means there is a relationship between regulation of Fe pill administration and the occurrence of anaemia in the pregnant mothers in Trimester III at the Clinic of Pregnant Mother Basel Bun. With a correlation coefficient value of 0.478 which means that the level of the relationship is in the category of sufficient relationship, where the range of correlations values between 0.41-0,60 is included in the Category of adequate relationship (Sugiyono, 2010).

DISCUSSION

Identification of ANC regularity in Covid-19 period Based on table 4 above it is known that the regularity of ANC examination obtained most of the respondents of the regular criteria, that is, as many as 75 respondents (61%). In this study, there are more than half of respondents have regularly performed ANC testing during pregnancy in the period of the COVID-19 pandemic. It's important to take care of the health of the pregnant mother and her baby. (Dharmayanti et al., 2019a). An ANC examination during pregnancy is important as early detection if there are signs of danger during pregnantness, such as the occurrence of disability and bleeding. (Omotayo et al., 2021a).

According to some literature, the ANC's success means more than saving lives or lowering AKI. (Fondjo et al., 2020a). In addition, the supportive and communicative functions of the ANC can also improve the quality of life for mothers and babies to be born. Indirectly, the ANC can also improve the quality of healthcare. (Dharmayanti et al., 2019b).

According to research conducted by Saputri (2020), there has been a decrease in the number of ANC visits to several regions in Indonesia during the Covid-19 pandemic. (Saputri et al., 2020). According to the guidelines for prenatal, maternal, neonatal and newborn services, the minimum standard for performing ANCs in the normal new era has changed, to be at least six detailed visits twice in the first trimester, once in the second trimester and three visits in the third trimester. (Kemenkes RI, 2020).

According to Nurfitriyani study (2020), the factors that influence the visit of pregnant mothers to the ANC during the Covid-19 pandemic include age, educational level, employment status, disease history, parity, knowledge, attitude, implementation of health protocols, home distance, role of medical personnel, as well as health protocol facilities. (Nurfitriyani dan Puspitasari, 2022).

Based on the results of this study, it is known that more than half of respondents have regularly carried out ANC tests during pregnancy during the Covid-19 pandemic. Quality ANC services have an important position in efforts to reduce the mortality rate of mothers and babies, because through professional and qualified ANC services, pregnant mothers are educated on how to keep themselves healthy, prepare for the birth of a healthy baby, and increase awareness and knowledge about the possible risks or occurrence of complications in pregnancies, so that optimal health can be achieved in the face of childbirth and breathing. (Hendarwan, 2018).

1) Identification of regular administration of Fe tablets in the period of Covid-19 Based on table 5 above it is known that regularity of administration of tablets Fe obtained most respondents of regular criteria, that is 64 respondents (52%). However, the prevalence of anemia in pregnancy continues to rise especially during the Covid-19 pandemic while the Indonesian government has established a program of providing 90 supplementary blood tablets for each pregnant woman. This is in line with the study carried out by Amalia (2021) which stated that as much as 55.2% of pregnant respondents have a negative attitude towards compliance with the consumption of Fe tablets during the Covid-19 pandemic (Amalia, Darmawati and Hermawati, 2021). This is important because pregnant mothers who are not consistent with taking Fe tablets have a 2.429 times greater risk of developing pregnancy anemia than those who are consistently taking Fe Tablets. Compliance with taking the Fe tablet is measured by the accuracy of the number of tablets consumed, the precision of how to take the Fe Tablet, the frequency of consumption per day. (Argaw, Kabthymer and Birhane, 2020a).

According to Noviyana (2021), the blood supplementation program plays an important role, one of which is the distribution of blood supplements from health care facilities to pregnant mothers.

Under normal circumstances, the distribution of blood supplement tablets is carried out according to the prescribed procedure, whereas during the Covid-19 pandemic, it is still done according to a specific strategy to prevent the spread of COVID-19. (Noviyana A, 2021). Blood tests are performed at least twice during pregnancy, namely in trimester I and trimester III. Considering that most pregnant mothers have anemia, 90 tablets of Fe are given to pregnant women in the puskesma. (Mistry et al., 2018a).

Identification of Anemia in Pregnant Mother Trimester III

Based on table 6 above it is known that the incidence of anemia obtained the majority of non-anemia criteria respondents, which is 81 respondents (65.9%). According to the World Health Organization (WHO) in 2010, 40% of maternal deaths in developing countries are caused by anemia. Anemia is often referred to as a "potential danger to mother and child" because pregnancy anemia affects not only the mother, but also the baby born. (Manuaba, 2010). Pregnancy anemia is defined as a condition in which the mother has low hemoglobin (Hb) levels, i.e. <11 gr% in the first and third trimesters, while in the second trimester the level of haemoglobin is <10.5 gr. Anemia commonly found in pregnancy is iron deficiency anemia of 62.3%, followed by megaloblastic anemia at 29.0% (Mochtar, 2015).

The negative effects of anemia can affect both the mother and the fetus. Pregnant mothers with anemia are at higher risk of morbidity and mortality. The impact of anemia on the mother is an increased risk of postpartum haemorrhagic. In the fetus, the impact may be low birth weight (BBLR), premature birth, and low Apgar values. (Sarwono, 2015).

In this study, some respondents did not suffer from anemia because the pregnant mothers in this study had regularly performed ANC tests and given Fe tablets so that the incidence of anemia could be minimized. It's good because pregnancy anemia can have a negative impact on mortality and morbidity for both mothers and babies. (Worku Takele et al., 2018). In pregnant women it poses a greater risk of death during childbirth, giving birth to a child with a lower weight or mental impairment of the baby. Anemia during pregnancy has an unfavourable influence on her pregnancies, such as abortion, premature birth, prolonged labor due to uterine inertia, BBLR, the possibility of birth with congenital defects. (Teshome, Meskel and Wondafrash, 2020b).

2) Identification of the Effect of ANC Regulation on the Incidence of Anemia during Covid-19

Results of research analysis on the relationship between the regularity of the ANC examination during COVID-19 in pregnant women of trimester III at the Clinic of Pregnant Mother Basel Bun, based on the statistical test using the Chi-Square test obtained p = 0,000 < 0,05 then H0 rejected and H1 received which means there is a connection between the regulation of ANC examinations during the period of COVid-19 in the pregnant mothers of the III trimester at the clinic of pregnant mothers Basal Bun. (regularity of examination ANC >< incidence of anemia) with a correlation coefficient value of 0,481 which means that the level of the relationship is in the category of relationship sufficient, where the range of correlations values between 0.41-060, included in the Category of Relations sufficient (Sugiyono, 2010).

The results of this study differ from the results of a study conducted by Natalia dkk (2017) which states that there is no relationship between the coverage of ANC and tablet Fe with the prevalence of anemia in East Java (p-value > 0.05). This can be caused by a number of factors that affect the occurrence of anemia, such as the bioavailability of iron, and the consistency of the pregnant mother's iron intake.

CONCLUSION

An analysis of the relationship between the administration of Fe tablets during the Covid-19 period to pregnant women in the third trimester at Bun Base Clinic, based on a statistical test using the Chi-Square test obtained p = 0,000 < 0.05 then H0 was rejected and H1 received which means there is a relationship between regularity of administration of the Fe tablet in the COVID-19 period in pregnant mothers in the III trimester in the Bun Base Baseline Clinic. (regularity of the use of tablets Fe >< occurrence of anemia) with a correlation coefficient value of 0.478 which means that the level of the link is in sufficient relationship category, where the range of correlations values is between 0.41-060, included in the category of sufficient relationships. (Sugiyono, 2010). The results of this study are similar to those of Dolang (2020), who found that there was a significant correlation between the regularity of ANC visits (p = 0.021) and the consumption of Fe tablets (p=0,000) in pregnant mothers in the city of Ambon. The results of this study show that there is a link between the regularity of the ANC examination and the administration of Fe tablets with the incidence of anemia in pregnant mothers of the third trimester at the Clinic of mother's jewels Basal Bun. By performing an ANC during pregnancy, the health care officer will provide information related to the pregnancies, such as nutritional food information during pregnantness and the pregnant mother will be given blood supplement tablets or Fe tablets free of charge. Both are done with the aim of reducing the risk of anemia during pregnancy. In addition, it can reduce the risk of missed opportunity in pregnant mothers to obtain prenatal services as well as early detection of abnormalities or diseases, especially anemia.

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