ISSN: 0975-833X

Available online at http://www.journalcra.com

International Journal of Current Research
Vol. 11, Issue, 06, pp.4958-4961, June, 2019

DOI: https://doi.org/10.24941/ijcr.35754.06.2019

INTERNATIONAL JOURNAL OF CURRENT RESEARCH

RESEARCH ARTICLE

THE INFLUENCES OF AGE, ANTENATAL CARE VISIT AND ADHERENCE WITH FE TABLET CONSUMPTION TOWARD THE INCIDENCE OF ANEMIA IN PREGNANT WOMEN

[1]Plora Novita Febrina Sinaga, [2]Sri Rahayu Sanusi and [3]Etti Sudaryati

[1]Alumni of Master Program in Public Health, Faculty of Public Health, Universitas Sumatera Urata, Medan, Indonesia

[2,3]Lecturer, Faculty of Public Health, Universitas Sumatera Urata, Medan, Indonesia

ARTICLE INFO

Article History:
Received 19th March, 2019
Received in revised form
04th April, 2019
Accepted 05th May, 2019
Published online 30th June, 2019

Key Words:
Antenatal care,
Pregnant, Anemia.

Corresponding author:

ABSTRACT

Background: pregnant woman must have adequate and nutritious nutrition during pregnancy for the process of growth and development of the fetus. Pregnant women who experience malnutrition during pregnancy such as lack of iron intake, it will cause adverse effects on the mother and fetal growth and development. Lack of iron intake in pregnant women can cause anemia. **Aims:** to analyze the influences of age, antenatal care visit and adherence with Fe tablet consumption toward the incidence of anemia in pregnant women. **Methods:** This study was observational analytic with case control research design. Respondents were 88 using by purposive sampling. Collecting data were questionnaires guideline. Analysis data were Chi-square and Manova. **Results:** there was a significant influence between age on the incidence of anemia in pregnant women p=<0.001, there was a significant influence between ANC visits to the incidence of anemia in pregnant women in the Medan Johor Health Center Working Area in 2019, p=<0.001, and there was a significant influence between adherence to consumption of Fe tablets to the incidence of anemia in pregnant women in the Medan Johor Health Center Working Area in 2019 p=<0.001. **Conclusion:** to overcome the problem of anemia in pregnancy is by early detection of complications and complications in pregnancy through the ANC service program, in the form of a pregnancy check-up of at least four visits namely at least once in the first trimester, once second trimester and two in the third trimester. Pregnant women who do not routinely make ANC visits are at risk of developing complications in pregnancy, one of which is the incidence of anemia.

Citation: ***Plora Novita Febrina Sinaga, Sri Rahayu Sanusi and Etti Sudaryati*****, 2018.** "The influences of age, antenatal care visit and adherence with Fe tablet consumption toward the incidence of anemia in pregnant women", *International Journal of Current Research*, 11, (06), 4958-4961.

INTRODUCTION

Pregnancy is the process of growth and development of the results of conception (fetus and placenta) in the uterus until before delivery. Pregnancy experiences physical, social and mental changes that are natural and affect their lives. Every pregnant woman must have adequate and nutritious nutrition during pregnancy for the process of growth and development of the fetus. Pregnant women who experience malnutrition during pregnancy such as lack of iron intake, it will cause adverse effects on the mother and fetal growth and development. Lack of iron intake in pregnant women can cause anemia. Anemia in pregnancy can increase the risk of death in mothers during childbirth, babies born with low weight, the risk of infection, the risk of premature birth and affect the growth and development of the fetus in the womb (Kemenkes RI, 2017). The World Health Organization (WHO, 2016), reports that the prevalence of anemia in pregnant women in the world is around 40.1 percent. This percentage has increased from 2015 by 39.8 percent and in 2014 amounted to 39.6 percent. The prevalence of anemia in pregnant women is estimated in Asia at 48.2 percent, Africa 57.1 percent, America 24.1 percent and Europe 25.1 percent (Astriana, 2017). Based on data from Basic Health Research (Riskesdas, 2018), the prevalence of anemia in pregnant women in Indonesia is 48.9 percent. Data on anemia in pregnant women increased compared to anemia data from the results of Riskesdas in 2013 which were 37.1 percent of them in the first trimester of 3.8 percent, second trimester of 13.6 percent and third trimester of 24.8 percent (Kemenkes, 2016). The report of the Medan City Health Office (2018) shows data from 39,240 pregnant women with 780 pregnant women who have anemia. The incidence of anemia in Indonesia is still high because prevention and treatment have not been carried out before pregnancy. Based on the Indonesian Health Profile in 2017, data was obtained that K4 service coverage in Indonesia had a target of 76 percent, North Sumatra exceeding the target of 87.09 percent. This coverage increased compared to 2016 at 84.13 percent.

In the city of Medan the coverage of K4 in 2017 was 93.34 percent, an increase from 2016, which was 89.56 percent (Profile of North Sumatra, 2017). The provision of Fe tablets in Indonesia in 2017 has a target of 90 percent, but the achievement in Indonesia is 80.81 percent, North Sumatra 78.02 where the provision of Fe in North Sumatra is more than or equal to 90 tablets at 7.94 percent and less than 90 tablet amounting to 52.11 percent. This percentage increased compared to 2016, which was 73.31 percent. Even though the government has carried out an anemia prevention program for pregnant women by giving 90 Fe tablets to pregnant women during the pregnancy period with the aim of reducing the anemia rate of pregnant women, the incidence of anemia in pregnant women is still high. The results of research conducted by Vanamala et al. (2017) in India, pregnant women who suffer from anemia with Hb levels of less than 10 gr/dl as much as 48.3 percent. The results of Astriana's (2017) study at the Tanjung Agung Health Center, Baturaja, anemic pregnant women were 42.6 percent.

Several factors that can cause anemia of pregnancy include age, education, occupation, parity, birth distance, compliance with tablet consumption, economic status, ANC visits, disease, emesis gravidarum and knowledge. The results of the study conducted by Astriana (2017), showed that there was a significant relationship between parity and the incidence of anemia in pregnant women with a statistical test value p value equal to 0.023 smaller than 0.05. The research results of Wahyu and Suharni (2015) also showed that there was a relationship of parity with the incidence of anemia in pregnant women with a statistical test value p value equal to 0.035 smaller than 0.05. This means that the higher the parity, the greater the risk of anemia. Anemia in pregnant women is a problem that needs to be addressed seriously, because it has a bad impact on the fetus, labor and postpartum. Fe tablets have been given to prevent anemia but the prevalence of anemia is still high. Based on the background above, the authors are interested in raising the issue in this study entitled "the influence of age, antenatal care visit and adherence to consuming tablet fe to the incidence of anemia in pregnant women".

MATERIALS AND METHODS

Study design: This type of research was observational analytic with case control research design. This study was conducted from February to July 2019.

Research subject: Eighty four respondent with 44 cases and 44 control who voluntered to participate in this study were selected by purposive sampling. Inclusion criteria included: 1) domiciled in the work area of Medan Johor Health Center, 2) pregnant women who get Fe tablets, 3) pregnant women who have the same economic status namely middle to lower, 4) pregnant women who have low education (not school, elementary/middle/high school), 5) pregnant women who have normal nutritional status (LILA more than 23.5 cm), and 6) pregnant women work as housewives and are willing to become respondents. Exclusion criteria: 1) Pregnant women who suffer from chronic diseases and 2) are not willing to become respondents

Data collection: Primary data collection was obtained directly from the data source by conducting interviews with respondents with questionnaire guidelines.

The primary data collected was related to the characteristics of pregnant women, the age of pregnant women, ANC visits and compliance with consuming Fe tablets. Secondary data of the study were obtained from the book of pregnant women visiting, reports and profiles of Medan Johor health centers.

Data analysis: Bivariate analysis to find out and test the relationship of the independent variable with the dependent variable by using the Chi Square test (X2), namely by connecting between the independent variables and the dependent variable. The results of bivariate test analysis if the value of p value is less than 0.05, the calculation results are statistically significant, if P value is more than or equal to 0.05 then the results of statistical calculations are not meaningful. Multivariate analysis was carried out to determine the independent variables that most related to the dependent variable. This multivariate analysis can be done using logistic regression test, that is, if the bivariate test results are obtained p value less than 0.25. Controlled OR can be calculated through logistic regression analysis, to estimate the risk of anemia in pregnant women due to risk factors. The method used in this analysis is the enter method, which will automatically include all selected variables to be included in the multivariate analysis then phased variables that have no effect will be excluded from the analysis and the process will stop until no more variables can be excluded from the multivariate analysis.

RESULTS

Distribution of Respondents Based on Risk Factors: Table 1 shows that the majority of respondents in the case group were of high risk age <20 years and> 35 years with details of cases of 29 people (65.9%). The majority in the control group with low risk age 20-35 years with details of 32 people (72.7%). Based on the table above shows the majority of respondents in the case group visited ANC less than 4 visits with details of cases of 34 people (77.3%). The majority in the ANC control group visited ≥ 4 visits with details of 31 people (70.5%). Based on the table above, the majority of respondents in the case group adhered to irregular consumption of Fe tablets with details of cases of 36 people (77.3%). The majority in the control group adhered to regular consumption of Fe tablets with details of 27 people (61.4%).

The influences of age, antenatal care visit and adherence with Fe tablet consumption toward the incidence of anemia in pregnant women: Based on the results of the study of age variables on the incidence of anemia in pregnant women it was found that there was a significant influence between age on the incidence of anemia in pregnant women in the Work Area of Medan Johor Health Center in 2019 p=<0.001. The OR value obtained was 5.1 (95% CI=2.075-12.812) indicating that the age of high risk was estimated at risk for the incidence of anemia at 5.1 times compared to the age of the low risk of age 20-35 years. Based on the results of the ANC visit variable on the incidence of anemia in pregnant women, it was found that there was a significant influence between ANC visits to the incidence of anemia in pregnant women in the Medan Johor Health Center Working Area in 2019, p=<0.001. OR values were obtained at 8.1 (95% CI=3.113-21,119) indicating that ANC visits were less than 4 times the estimated risk for anemia was 8.1 times compared to enough ANC visits ≥4 visits. Based on the results of research on the variables of Fe tablet consumption adherence to the incidence of anemia in pregnant women it was found that there was a significant

Table 1. Frequency Distribution Based on Risk Factors: age, ANC Visits and Compliance with Fe Tablet Consumption in the Medan Johor Health Center Work Area in 2019

Characteristics of respondents	Respondent status			
	anemia	%	not anemia	%
Age				
Low risk 20-53 years	15	34.1	32	72.7
High risk < 20 years and > 35 years	29	65.9	12	27.3
Total	44	100	44	100
ANC Visits				
Enough ≥4 times visits	10	22.7	31	70.5
Deficient < times visit	34	77.3	13	29.5
Total	44	100	44	100
Compliance with Fe tablet consumption				
Reguler	8	18.2	27	61.4
Irreguler	26	81.2	17	38.6
Total	44	100	44	100

Table 2. The influences of age, antenatal care visit and compliance with Fe tablet consumption toward the incidence of anemia in pregnant women

Variable	The incidence of anemia				Crude OR (95% CI)	p-value
	Cases	%	Controls	%		
Age						
Low risk 20-53 years	15	34.1	32	72.7	5.1	<0.001
High risk < 20 years and > 35 years	29	65.9	12	27.3	2.075-12.812	
ANC Visits						
Enough ≥4 times visits	10	22.7	31	70.5	8.1	<0.001
Deficient < times visit	34	77.3	13	29.5	3.113-21.119	
Compliance with Fe tablet consumption						
Reguler	8	18.2	27	61.4	7.1	<0.001
Irreguler	36	81.8	17	38.6	2.690-18.992	

Table 3. Logistic Regression Model of Anemia in Pregnant Women in the Medan Johor Health Center Work Area in 2019

Variables	B	P	Exp B	95% CI	
				Lower	Upper
Age	1.703	0.004	5.490	1.718	17.544
ANC visit	2.114	0.000	8.278	2.585	26.507
Fe tablet consumption	2.264	0.000	9.617	2.774	33.338
Constant	-3.335	0.000	0.36		

influence between adherence to consumption of Fe tablets to the incidence of anemia in pregnant women in the Medan Johor Health Center Working Area in 2019 p=<0.001. OR values obtained at 7.1 (95% CI=2,690-18,992) showed that consumption of irregular Fe tablets estimated the risk for the incidence of anemia was 7.1 times compared to consumption of regular Fe tablets.

Logistic Regression Model of Anemia in Pregnant Women: Based on the results of multiple logistic regression analysis in the table with enter method shows that the age variable with a value of p=0.004 (p<0.05). This shows that age affects the incidence of anemia in pregnant women. Based on the results of multiple logistic regression tests indicate that the ANC visit variable with a value of p=0,000 p(<0.05). This shows that ANC visits affect the incidence of anemia in pregnant women. Based on the results of multiple logistic regression tests showed that the variable compliance with consumption of Fe tablets with a value of p=0,000 (p<0.05). This shows that compliance with consumption of Fe tablets affects the incidence of anemia in pregnant women. If you see the OR value of the results of multiple logistic regression it is known that the variable compliance with Fe tablet consumption has the highest OR value of 9.617 (95% CI= 2.774-33,338), this indicates that the variable compliance with Fe tablet consumption is the most dominant variable affecting the incidence of anemia in pregnant women in the Medan Johor Community Health Center Working Area in 2019, meaning that pregnant women who do not regularly consume Fe tablets are at risk of anemia by 9.6 times greater than pregnant women who consume Fe tablets regularly.

DISCUSSION

Based on the results of research conducted at the Medan Johor Health Center, the majority of pregnant women with high risk of anemia were <20 years and> 35 years as many as 29 people (65.9%) and pregnant women who did not suffer from anemia, the majority of low risk ages were 20-35 year as many as 32 people (72.7%). So that bivariate results show that there is an influence of age on the incidence of anemia in pregnant women with a value of p=0.000. This can be caused by pregnant women because they are too young and too old to get pregnant. Pregnant women at the age of too young <20 years are not ready to pay attention to the environment needed for fetal growth. Besides that, there will be food competition between the fetus and its own mother which is still in growth and hormonal growth occurs during pregnancy. As you get older, the need for nutrition will increase while the system in your body decreases. While pregnant women aged> 30 years tend to experience anemia, this is due to the effect of decreased iron reserves in the body due to fertilization. The results of this study are in line with the research of Syafuddin (2012). The results of the analysis with the chi square test obtained a value of p = <0.001 which means that there is an influence of age on the incidence of anemia in pregnant women in the Puskesmas District of Kulon Progo District. Based on the results of research conducted in the Johor Johor Health Center that the

majority of pregnant women who suffer from anemia visit ANC less than 4 visits as many as 34 people (77.3%) and pregnant women who are not anemic the majority of ANC visits are enough that ≥4 visits as many as 31 people (70.5%). Bivariate results showed that there was a significant effect between ANC visits to the incidence of anemia in pregnant women with a value of p=0,000. The results of this study are in line with those conducted by Ernawati and Fatimah (2015) in Yogyakarta Based on the results of the chi-square test, the value of p = 0.004 means that there is a relationship between ANC midwife services and the incidence of Trimester III pregnant women in Sedayu I Bantul Yogyakarta. While the results of the analysis were OR 9.800, meaning pregnant women who received ANC had a 9.8 times chance of not having anemia in their pregnancy. Antenatal care with a quality assurance program is a special health service for pregnant women, mothers of childbirth, postpartum mothers and breastfeeding mothers according to standards, based on resources that are owned, directed, systematic, supported by the provision of adequate midwifery health workers, accompanied by good technical or operational guidance (Kemenkes, 2015). Achieving the goals of antenatal services with a quality assurance program requires several conditions, namely: available (available), reasonable, continuous, acceptable (acceptable), achievable (affordable), affordable, efficient and quality.

Based on the results of research conducted at the Medan Johor Health Center, it showed that the majority of pregnant women who suffered from anemia consumed irregular Fe tablets as many as 36 people (81.8%) and pregnant women who did not suffer from the majority of regular Fe tablet consumption of 27 people (61.4%). So that bivariate results show that there is a significant influence between consumption of Fe tablets on the incidence of anemia in pregnant women with a value of p=0.000. Based on the results of multivariate analysis also showed that consumption of Fe tablets had a significant effect on the incidence of anemia and was the most dominant variable in the incidence of anemia in pregnant women in the Johor Health Center working area p = 0,000 OR; 9,617; 95% CI 2,774-33,338 Meaning that pregnant women who consume irregular Fe tablets have 9 times the risk of pregnant women having anemia compared to pregnant women consuming regular iron tablets. Iron (Fe) nutrients are a group of minerals needed as the core of hemoglobin, the main element of red blood cells. Some of this increase can be fulfilled from iron reserves and iron absorbed by the digestive tract. In consuming food sources of iron, in addition to paying attention to quantity (the amount of iron contained in food) must also pay attention to its quality, namely absorption and high biological value in order to contribute enough nutrients to the body. This research is in line with the research conducted by Hekakaya 2016 in West Papua based on the analysis conducted with chi-square test.

It can be seen that the significance value for the compliance behavior variable in taking Fe supplements is 0.001 <0.05, so it can be concluded that supplementary behavior has a significant effect on maternal anemia pregnant. An iron (Fe) supplement is a tablet containing 60 mg of elemental iron and 0.25 mg of folic acid on each tablet.

Conclusion

Based on the results of research on the influence of age, ANC visits and adherence to consumption of Fe tablets in the work area of Medan Johor Health Center in 2019, the following conclusions can be drawn: There is an influence of age on the incidence of anemia in pregnant women. There is influence of consumption of Fe tablet consumption on the incidence of anemia in pregnant women and Based on the results of the multivariate test the most dominant variable affecting the incidence of anemia in pregnant women is compliance with consumption of Fe tablets.

REFERENCES

Astriana, W. 2017. Kejadian Anemia Pada Ibu Hamil Ditinjau dari Paritas dan Usia. *Jurnal Ilmu Kesehtan Aisyah, 2*(2), 123-130.

Ernawati S., Fatimah. 2015. Pelaksanaan Antenatal Care Berhubungan Dengan Anemia pada Kehamilan Trimester III di Puskesmas Sedayu I Yogyakarta. *Jurnal Ners dan Kebidanan Indonesia*.

Hekakaya. 2016. Hubungan Prilaku Makan dan Konsumsi Tablet Fe Dengan Kejadian Anemia pada Ibu Hamil di Kabupaten Fakfak Papua Barat.

Kementerian Kesehatan RI. 2015. *Pedoman Pelayanan Antenatal Terpadu* (Edisi kedua). Jakarta: Kemenkes RI Direktorat Jenderal Bina Gizi dan KIA.

Kementerian Kesehatan RI. 2017. *Profil Kesehatan Indonesia Tahun 2017*. Jakarta: Kemenkes RI, 2018.

KementerianKesehatan RI. 2016. *Profil Kesehatan Indonesia Tahun 2016*. Jakarta: Kemenkes RI, 2017.

Riskesdas, 2018. *Riset Kesehatan Dasar Indonesia Tahun 2018*. Jakarta: Kemenkes RI.

Syafuddin. 2012. Hubungan Usia Dengan Anemia Dalam Kehamilan pada Ibu Hamil di Puskesmas Kecamatan Wates Kabupaten Kulon Progo Tahun 2012.

Vanamala, V.G., Rachel, A., Pakyanadhan, S., & Somavathi, 2017. Incidence and Outcome of Anemia in Pregnant Women : A Study in A Tertiary Care Centre. *International Journal of Reproduction, Contraception, Obstetric and Gynecology, 7*(2) 462-466.

Wahyu, Suharni, 2015. *Hubungan Paritas Dengan Kejadian Anemia Pada Ibu Hamil Di Puskesmas Godean II Sleman Yogyakarta 2015*. Universitas Aisyiyah Yogyakarta

World Health Organization 2016. *The Global Prevalence of Anemia.* Geneva: World Health Organization.

****