

Association between Severity of Anemia and Maternal Factors During Pregnancy in Maternity Teaching Hospital/Erbil City

العلاقة بين شدة فقر الدم وعوامل الامومة أثناء فترة الحمل في مستشفى الولادة التعليمية / أربيل

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الخلاصة:

الخلفية: فقر الدم هو مشكلة صحية عالمية واسعة الانتشار بشكل غير متناسب بين النساء في البلدان النامية. بالإضافة إلى كونه عامل خطر مستقل لانخفاض جودة الحياة وزيادة معدلات الاعتلال والوفيات، وقد تم ربط فقر الدم لدى النساء إلى النتائج السلبية للحمل. هو اضطراب التغذية الأكثر شيوعاً في العالم والوثر على ملياري شخص في جميع أنحاء العالم مع النساء الحوامل بشكل خاص.

الهدف: تهدف الدراسة الحالية إلى معرفة العلاقة بين شدة فقر الدم مع عوامل الامومة التالية: العوامل الديموغرافية، والتاريخ الطبي والتوليد، والنظام الغذائي والأدوية والمظاهر السريرية.

المنهجية: أجريت دراسة وصفية على 64 امرأة مصابة بفقر الدم في مستشفى الولادة التعليمية/ مدينة أربيل، خلال الفترة من الأول من اذار الى 30 حزيران 2013. واستخدم عينة هادفة (غير الاحتمالية). وتم إعداد الاستبانة من قبل الباحثين التي ضمت الأجزاء التالية المعلومات الاجتماعية والديموغرافية والتاريخ الطبي والتوليد، ونمط الغذاء والدواء، والمظاهر السريرية ومستوى الهيموغلوبين. تم استخدام النسبة المئوية ومربع كاي لتحليل النتائج.

النتائج: اشارت نتائج الدراسة بان نسبة 57.8% من عينة الدراسة أثناء فترة الحمل مصابين فقر الدم المعتدل. والغالبية العظمى من عينة الدراسة تتراوح أعمارهم بين 18-35 سنة، ومقيمين في منطقة حضرية وكانت ربات بيوت. اشارت الدراسة بوجود علاقة مؤثرة بين شدة فقر الدم مع الإقامة الحضرية وتناول كمية من الخضروات الورقية الخضراء. وبينت نتائج الدراسة بان لا توجد علاقة بين شدة فقر الدم والعوامل التالية: العمر والمهنة والدخل والراتب الشهري، والمستوى التعليمي، والتاريخ الطبي والتوليد السابق، والتاريخ التوليد الحالي، ونمط غذائي والأدوية.

الاستنتاجات: شدة فقر الدم كان مرتبطاً مع نوع الإقامة.

التوصيات: العمل على زيادة برامج التوعية للتقليل من نسبة الإصابة بفقر الدم اثناء فترة الحمل ، اجراء مزيد من الدراسات حول فقر الدم اثناء الحمل لانها حالة حرجة وتؤثر على معدل الامراضية والوفيات.

Abstract

Background and Objectives: Anemia is a global health issue with disproportionately high prevalence in women in developing countries. In addition to being an independent risk factor for decreased quality of life and increased morbidity and mortality, anemia in women has been linked to unfavorable outcomes of pregnancy. It is the most common nutritional disorder in the world affecting 2 billion people worldwide with pregnant women particularly at risk. This study aimed to find out the association between severity of anemia with the following maternal factors: sociodemographic, medical and obstetrical history, diet and medication and clinical manifestation.

Methods: A descriptive study was conducted on 64 anemic pregnant women in Maternity Teaching Hospital/Erbil city, during the period Mar 1st to 30th June 2013. A purposive (non-probability) sampling was used. A questionnaire format was prepared by researchers which included following parts: sociodemographic data, medical and obstetrical history, diet pattern and medication, clinical manifestation and Hb level at admission.

Results: 57.8% of the study sample had moderate anemia during pregnancy. The majority of the study sample aged between 18-35 years, resident in urban area and were housewives. There was significant association between severity of anemia with urban residency and number of taking leafy green vegetable/week. There was no association between severity of anemia and following maternal factors: age, occupation, monthly salary income, educational level, previous medical and obstetrical history, current obstetrical history, diet pattern and medication. Data was analyzed by using percentage and chi square

Conclusions: Severity of anemia was associated with residency.

Recommendations: Work to increase the awareness programs to reduce the incidence of anemia during pregnancy Further studies have to done with more sample size because anemia during pregnancy is critical condition especially in case of severe anemia that increase the rate of morbidity and mortality .

Key words: Severity, anemia, pregnancy

INTRODUCTION

Anemia is a lack of red blood cells, which can lead to a lack of oxygen-carrying ability, causing unusual tiredness. The deficiency occurs either through the reduced production or an increased loss of red blood cells. Approximately 51% of pregnant women are anemic before delivery (1). The WHO identify anemia in pregnancy as a hemoglobin (Hb) reading of less than 11 g/dl. Additionally, it is the point at which a patient is likely to become symptomatic and at which therapeutic intervention becomes critical (2) .Anemia in pregnancy constitutes a major public health problem in developing countries and high morbidity and mortality among mothers. The average mortality attributed by anemia in Asia is estimated as 7.26%. Its prevalence in Africa was 57.1%, South East Asia was 48.2%, Europe was 2.1%, Western pacific was 30.7 and 41.8% (3). Many studies explained the status of anemia in antenatal mothers was depend on the socioeconomic level, illiteracy, extremes of mother's age, primigravida or grandgravida, short pregnancy intervals and age of gestation(3,4)Studies on the prevalence and aetiology of anaemia in pregnancy in primary care level is lacking in most parts of kurdistan. The study is intended to provide useful information that would help in identifying likely areas for specific intervention for enhanced reproductive health performance. This study aimed to find out the association between severity of anemia with following maternal factors: sociodemographic, medical and obstetrical history, diet and medication and clinical manifestation.

SUBJECTS AND METHODS

A descriptive study was conducted on 64 anemic pregnant women in Maternity Teaching Hospital/Erbil city, during the period March 1st to June 30th 2013. A purposive (non-probability) sampling was used. Prior to data collection permission was taken from General Directorate of Health in Erbil city. Those pregnant women who admitted in the hospital and diagnosed as anemia were participated in the study. A questionnaire format was prepared by researchers which included following parts: sociodemographic data, medical and obstetrical history, diet pattern and medication, clinical manifestation and Hb level at admission. Direct interview technique was applied for collection the data. Verbal consent was taken from study participants before interview. Data were analyzed using the Statistical Package for Social Science (SPSS version 18). The study participants divided into three groups according severity of anemia based on WHO guideline for diagnosis of anemia during pregnancy and Hb concentration (g/dl) which is as following: mild anemia (10-10.9), moderate anemia (7-9.9) and severe anemia (<7). chi-square test was used for association between severity of anemia and maternal factors. P value ≤ 0.05 was considered as significant association between variables.

RESULTS

Table 1- Association between the demographic characteristic of the study sample and severity of anemia

	Variables	No.	Mild	Moderate	Severe	P-value
1	Age					0.385*
	- <18	1	0	0	1	
	- 18-35	55	10	31	14	
	- >35	8	0	6	2	
2	Residency					0.019*
	- urban	43	7	27	9	
	- rural	11	2	8	1	
	- suburban	10	1	2	7	
3	Occupation					0.765*
	- housewife	56	8	33	15	
	- employee	8	2	4	2	
4	Monthly income					0.623*
	- adequate	52	6	28	13	
	- inadequate	12	4	9	4	
5	Educational level					0.721*
	- <6 years	31	3	19	9	
	- 6-12 years	25	6	13	6	
	- >12 years	8	1	5	2	

*Fisher exact test was applied

Table 1 shows that More than half (57.8%) of the study sample had moderate anemia during pregnancy. The majority of the study sample aged between 18-35 years, resident in urban area and were housewives. The considerable proportion (48.5%) of them had less than 6 years education.

There was significant association between severity of anemia with residency, but no significant association with age, occupation, level of education and monthly income. The proportion of women who had moderate anemia was higher among those who were resident in urban area.

Table 2- Association between previous medical history and severity of anemia

	Variables	No.(%)	Mild	Moderate	Severe	P-value
1	Anemia					0.197*
	- yes	16(25)	1(6.3)	8(50)	7(43.8)	
	- no	48(75)	9(18.8)	29(60.4)	10(20.8)	
2	Hypertension					0.792*
	- yes	4(6.3)	1(25)	2(50)	1(25)	
	- no	60(93.8)	9(15)	35(58.3)	16(26.7)	
3	Gastrointestinal diseases					0.119*
	- yes	4(6.3)	2(50)	1(25)	1(25)	
	- no	60(93.8)	8(13.3)	36(60)	16(26.7)	
4	Diabetes mellitus					1.000*
	- yes	6(9.4)	1(16.7)	4(66.7)	1(16.7)	
	- no	58(90.6)	9(15.5)	33(56.9)	16(27.6)	
5	Urinary tract infection					0.249
	- yes	40(62.5)	7(17.5)	20(50)	13(32.5)	
	- no	24(37.5)	3(12.5)	17(70.8)	4(14.7)	

*Fisher exact test was applied

Table 2 reveals that there was no statistically significant between severity of anemia with previous medical history .

Table 3- Association between previous and current obstetrical information with severity of anemia

	Variable	No.	Mild	Moderate	Severe	P-value
1	Parity					
	- nuliparus	15	3	6	6	0.480*
	- multiparous	45	7	28	10	
- grand multiparous	4	0	3	1		
2	Gestational age					
	- 1st trimester	11	1	5	5	0.703*
	- 2nd trimester	28	5	17	6	
- 3rd trimester	25	4	15	6		
3	Taking folic acid during current pregnancy					
	- yes	29	7	16	6	0.201
- no	35	3	21	11		
4	Heavy menstrual flow before pregnancy					
	- yes	30	4	16	10	0.507
- no	34	6	21	7		
5	Bleeding during current pregnancy					
	- yes	10	2	7	1	0.553*
- no	54	8	30	16		
6	Hyperemesis gravidarum during current pregnancy	20	3	12	5	0.971
	- yes	44	7	25	12	
	- no					

*Fisher exact test was applied

Table 3 shows that there was no statistically significant association between severity of anemia with previous and current obstetrical history.

Table 4- Association between diet pattern and medication during current pregnancy with severity of anemia

	Variable	No.(%)	Mild	Moderate	Severe	P-value
1	Drinking tea after meal					
	- yes	46(71.9)	7(15.2)	27(58.7)	12(26.1)	1.000*
	- no	18(28.1)	3(16.7)	10(55.6)	5(27.8)	
2	Time of drinking tea after meal					
	- no drinking tea	18 (28.1)	3(16.7)	10(55.6)	5(27.8)	0.403*
	- immediately	34 (53.1)	3(8.8)	21(61.8)	10(29.4)	
	- 10-30 min	6 (9.4)	1(16.7)	3(50)	2(33.3)	
	- after 30 min	3 (4.7)	2(66.7)	1(33.3)	0(0)	
- after 2 hours	3 (4.7)	1(33.3)	2(66.7)	0(0)		
3	Number of meal per day					
	- 2	6(9.4)	0(0)	3(50)	3(50)	0.175*
	- 3	54(84.4)	8(14.8)	33(61.1)	13(24.1)	
- ≥4	4(6.2)	2(50)	1(25)	1(25)		
4	No. of taking leafy green per week					
	- 0	4(6.3)	0(0)	2(50)	2(50)	0.053
	- 1-3	12(18)	2(16.7)	4(33.2)	6(50)	
	- 4-6	20(31.2)	5(25)	14(70)	1(5)	
- >6	28(43.8)	3(10.7)	17(60.7)	8(28.6)		
5	No. of taking red meat per week					
	- 0	9(14.1)	2(22.2)	7(77.8)	0(0)	0.223*
	- 1	17(26.6)	3(17.6)	10(58.8)	4(23.5)	
	- 2	34(53.1)	4(11.8)	17(50)	13(38.2)	
- 3	4(6.3)	1(25)	3(75)	0(0)		
6	Taking folic acid tablet					
	- yes	29(45.3)	7(24.1)	16(55.2)	6(20.7)	0.201
	- no	35(54.7)	3(8.6)	21(60)	11(31.4)	
7	Antacid drugs					
	- yes	4(6.3)	1(25)	2(50)	1(25)	0.792*
	- no	60(93.7)	9(15)	35(58.3)	16(26.7)	

*Fisher exact test was applied

Table 4 present that more than half (57.8%) of the study sample had moderate anemia during pregnancy. The majority of the study sample aged between 18-35 years, resident in urban area and were housewives. The considerable proportion (48.5%) of them had less than 6 years education.

There was significant association between severity of anemia with residency, but no significant association with age, occupation, level of education and monthly income. The proportion of women who had moderate anemia was higher among those who were resident in urban area (Table 1). There was no statistically significant association between severity of anemia with previous medical history and previous and current obstetrical history (Table 2 and 3). Also there was no significant association between severity of anemia and following variable: drinking tea after meal, time of drinking tea after meal, number of meal per day, no. of taking leafy green per week, no. of taking red meat per week, antacid drugs, taking folic acid tablet. The most of women who had mild anemia were those who took more than 4 time leafy green per week as diet pattern.

DISCUSSION:

The majorities of the study participants were at age group 18-35 years and housewife and had level of education less than 6 years. These results are agree with the results of a study done by (5) who examined prevalence and risk factors of anemia in 1005 pregnant women in Benin. Most of the study sample had moderate anemia during pregnancy. Also

they found significant association between level of hemoglobin and age, gravidity and gestational age which are disagree with the results of the present study. (6) Found no significant association between age and educational level and anemia during pregnancy which agree with the results of the the present study. The majority of the study sample in their study had mild anemia which is in agreement with the results of the present study. The results of a study conducted by (7) showed that the severity of anemia increase with older maternal age, lower education and low income.

The results of the study done by (8) are consistent with the results of the present study which showed no significant association of anemia with taking supplementation of iron and folic acid during current pregnancy. This study has some limitations: in addition of small sample size, in order to recruit an adequate sample size within the planned study period, a non-probability sampling technique was used. This could have introduced some bias in the study. The actual diet of the participants was not investigated. The role played by dietary deficiencies in the etiology of anemia therefore remains a subject for further study.

CONCLUSION

Severity of anemia is associated with urban residency and number of taking leafy green per week.

RECOMMENDATION

1. Increase the educational health programs regarding anemia to reduce the incidence of anemia during pregnancy.
2. Further studies have to done with more sample size because anemia during pregnancy is critical condition especially in case of severe anemia that increases the rate of morbidity and mortality.

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