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انتشار فقر الدم والعوامل المرتبطة به بين النساء الحوامل في طبرق

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Prevalence of anemia and associated factors among pregnant women in Tobruk city

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الملخص:

فقر الدم مشكله صحية منتشرة في جميع أنحاء العالم لقد كانت مكملات الحديد هي التدخل المفضل لتحسين مخزون الحديد والوقاية من فقر الدم بين النساء الحوامل؛ تقليديا تم منع فقر الدم الحملي عن طريق مكملات الحديد اليومية طوال فتره الحمل ؛أجري هذا البحث لتقييم معدل فقر الدم بين النساء الحوامل في مدينه طبرق والتحقق من ارتباطه بعمر المرأة تم استخدام 322 سجل دم للحوامل فقط وتم جمعها من مختبر ابن رشد الطبي في مدينه طبرق غطت الفترة من أكتوبر 2023 إلي يناير 2024. تم جمع عينة الدم في أنبوب اختبار مع **EDITA** ورجها ثم وضع الأنبوب في آلة **MANDR % HD36 CBC**

تم تحليل التباين للتحقق من تأثير العمر في حين تم تطبيق اختبار مربع كاي للكشف عن العلاقة بين العمر ونقص الهيموجلوبين. أظهرت النتائج أن 70% من النساء الحوامل اللاتي شملتهن الدراسة كن يعانين من نقص الهيموجلوبين.

وبعد إظهار النسب خلصت الدراسة أن معدل انتشار فقر الدم بين النساء الحوامل في مدينة طبرق كان مرتفعا 70% ولا يوجد ارتباط بين عمر المرأة ونقص الهيموجلوبين .

الكلمات الدالة: فقر الدم، النساء الحوامل، العوامل المصاحبة، مدينة طبرق، الحديد.

Abstract

Anemia is a prevalent health problem worldwide. Iron supplementation has been the preferred intervention to improve iron stores and prevent anemia among pregnant women. Traditionally, gestational anemia has been prevented with daily iron supplements throughout pregnancy. This research was conducted to assess anemia rate among pregnant women in Tobruk city and to verify it association with woman age. Only 322 blood records of pregnant women were used and collected from Ibn Rushed Medical Laboratory center, Tobruk city, covered the period from

October 2023 to January 2024. The blood sample was collected in test tube with EDITA and well shake, then the tube was put in CBC machine (MANDRY, HD36). The data were analyzed using SPSS software, the analysis of variance was performed to verify the effect of age, while the chi square test was applied to detect the association between age and hemoglobin deficiency. The results revealed that 70% of the studied pregnant women were strapped for hemoglobin deficiency. The averages hematocrit %, RBC count and hemoglobin level were 32.01±3.52, 3.91±0.41 and 10.33±1.17, respectively. The analysis of variance showed insignificant (P>0.05) effect of age on hematocrit %, RBC count and hemoglobin level. Moreover, the chi square test revealed insignificant (P>0.05) association between age of pregnant woman and hemoglobin deficiency. The study concluded that prevalence of anemia (hemoglobin deficiency) among pregnant women in Tobruk city pregnancy was high (70%) and there no association between woman age and hemoglobin deficiency.

Keywords: Anemia, pregnant women, Associated factors, Tobruk city, Iron.

Introduction:

Anemia is a condition defined with less hemoglobin (HB) level than normal range in the body, which decrease oxygen carrying capacity of red blood cells to tissues (2). Anemia in pregnancy is an important public health problem worldwide. Also is a major health problem among females of reproductive age in developing countries (12). Anemia is one of the public health concerns, which affect 32.4million pregnant women around the world. Whichparticularly, common insouthAsia (3,4). A study in 2022 showed the anemia is more prevalent in developing countries (1). Also, another previous studies have reported that the prevalence of anemia in pregnant women varies with different lifestyle, or behaviors in different culture (5). In developing countries such as Nigeria, anaemia in pregnancy is thought to be one of the most common complications of pregnancy accounting for a significant level of maternal morbidity and mortality (13).

The studies indicated that anemia continues to be a severs health problem among pregnant women. This study was carried out to determine the hematocrit %, Red Blood cells count (RBC) and hemoglobin level (HB) to assess anemia rate among pregnant women in Tobruk city and to verify it association with woman age.

Materials and Methods

The data of this study were collected from Ibn Rushed Medical Laboratory center, Tobruk city and covered the period from October 2023 to January 2024. Only 322 blood records of

pregnant women were used. The blood samples were collected in test tube with EDITA and well shake, then the tube was put in CBC machine (MANDRY, HD36). The studied variables were hematocrit % (HTC), Red Blood cells count (RBC) and hemoglobin level (HB). The age of women were classified into four group. The collected data were analyzed using SPSS software. The analysis of variance was performed to verify the effect of age on the studied variables, while the chi square test was applied to detect the association between age and hemoglobin deficiency.

Results and Discussion

The rate of hemoglobin deficiency among pregnant women was explained in Fig 1. The results revealed that 225 pregnant women out of 322 (about 70%) were strapped for hemoglobin deficiency (HG). The prevalence results of anemia rate among pregnant women in Tobruk city were restively higher when compared with world health organization report revealed that the anemia prevalence picture at global level was 52% in the developing countries compared with 23% in the developed countries (6). Also, According to NFHS-5, 45.7% of women in urban India were affected by anaemia during their pregnancy (14).

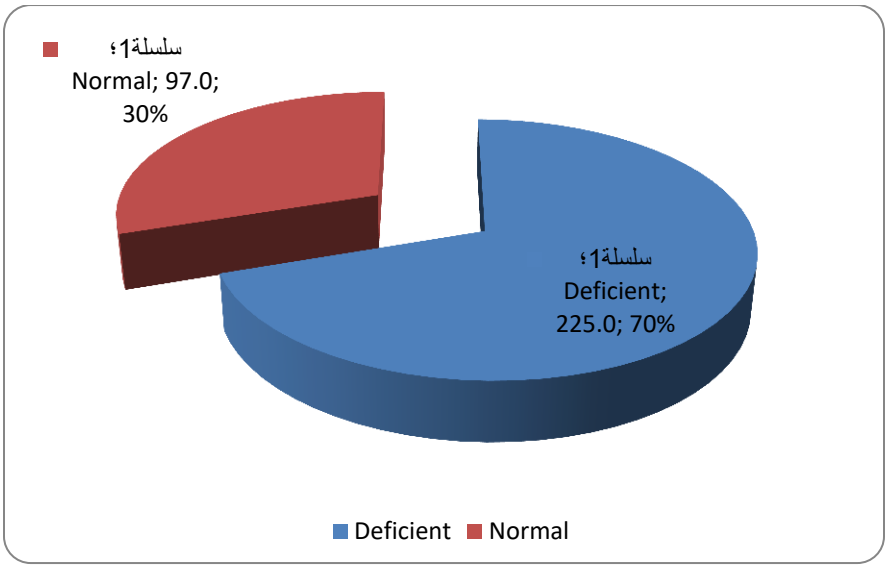

Fig 1. Hemoglobin deficiency rate among pregnant women

The results of Table 1. showed that the grand mean of hematocrit % in the studied pregnant women was 32.01±3.52, also the results revealed that the age of pregnant woman had insignificant (P>0.05) influence on hematocrit % in pregnant women. Moreover, the results

revealed that the women aged more than 36 years recorded insignificantly the lowest hematocrit % (31.18± 3.96) and followed by those women aged less than 25 and or between 31-35 years (31.91±3.39 and 31.93±3.72, respectively), while those women with age between 26-30 years recorded the greatest percentage (32.56±3.28%). The present findings are similar with results of previous studied included 300 pregnant women and revealed that the mean of hematocrit level for age of 23-28 years was reading 32.02±3.40 (7). Also, the lowest hematocrit level was observed among 304 pregnant women their age ranged from 18 to 41 years was 28.06±3.27 % (8).

Table 1. The effect of age on level of Hematocrit (HTC) % in pregnant women

Age group	NO	Mean	SD
≤ 25	118	31.91[a]	3.39
26-30	99	32.56[a]	3.28
31-35	61	31.93[a]	3.72
≥ 36	44	31.18[a]	3.96
Total	**322**	**32.01**	**3.52**
Significant	**NS**		

The influence of pregnant woman age on RBC count was presented in Table 2. The results revealed that the overall average RBC count was 3.91 ± 0.41 and the age of pregnant woman had insignificant $(P>0.05)$ effect on RBC count. Also the results showed that those women aged between $31-35$ years recorded the least count (3.86 ± 0.46) followed by those women aged ≤ 25 years (3.91 ± 0.37) and aged between $26-30$ years (3.93 ± 0.39). On the other hand; those female aged > 36 years had the greatest count of RBC (3.95 ± 0.47). The same finding was reported that the RBC count in pregnant women aged between $20-40$ years was 3.90 ± 0.46 (9).

Table 2. The effect of age on Red Blood cells (10^6/mcL) count in pregnant women

Age group	NO	Mean	SD
≤ 25	118	3.91[a]	0.37
26-30	99	3.93[a]	0.39
31-35	61	3.86[a]	0.46
≥ 36	44	3.95[a]	0.47
Total	**322**	**3.91**	**0.41**
Significant	**NS**		

The results of Table 3. showed that the overall mean of hemoglobin in the studied pregnant women was 10.33 ± 1.17 g/dl, also the results revealed that the age of pregnant woman had insignificant $(P>0.05)$ influence on hemoglobin level. Moreover, the results revealed that the women aged ≥ 36 years recorded insignificantly the lowest hemoglobin level $(9.96\pm1.52$ g/dl) and followed by those women aged ≤ 25 $(10.27\pm1.09$ g/dl) and those aged between $31-35$ years $(10.40\pm1.24$ g/dl), while those women with age between $26-30$ years recorded the greatest HB $(10.52\pm0.99$ g/dl).

Table 3 The effect of age on hemoglobin level (g/dl) in pregnant women

Age group	NO	Mean	SD
≤ 25	118	10.27^{a}	1.09
26-30	99	10.52^{a}	0.99
31-35	61	10.40^{a}	1.24
≥ 36	44	9.96^{a}	1.52
Total	**322**	**10.33**	**1.17**
Significant	**NS**		

The results showed insignificant $(P>0.05)$ association between age of woman and hemoglobin deficiency in pregnant ones. Moreover, the results revealed that the greatest percentage of hemoglobin deficiency was observed in pregnant women aged ≥ 36 years (75.0%), followed by those pregnant women aged ≤ 25 years showed 70.0% of hemoglobin deficiency, while the pregnant women aged between $26-35$ recorded the lowest percentage of hemoglobin deficiency. The pregnant women aged ≥ 36 years recorded the highest percentage of hemoglobin deficiency this finding is higher than that reported for women aged from 37 to 56 in other studies (10) and (11).

Table 4 The association between hemoglobin deficiency and the age of pregnant woman.

Age group		Hemoglobin level		Total
		Deficient	Normal	
≤ 25	No	83	35	118
	%	70.3%	29.7%	100.0%
26-30	No	68	31	99
	%	68.7%	31.3%	100.0%
31-35	No	41	20	61
	%	67.2%	32.8%	100.0%
≥ 36	No	33	11	44
	%	75.0%	25.0%	100.0%

Total	No	225	97	322
	%	69.9%	30.1%	100.0%
Significant	(X^2=0.83; P>0.05)			

Conclusion:

The study concluded that the prevalence of anemia (hemoglobin deficiency) among pregnant women in Tobruk city pregnancy was critically high (70%) and there no significant association between woman age and hemoglobin deficiency, the women aged ≥ 36 years recorded insignificantly the lowest hemoglobin level.

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