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Maternal Anemia in Iraq: A Ten-Year Comprehensive Review (2014-2023) A Review of Literature

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Abstract

Anemia in pregnancy is a significant worldwide public health concern, particularly in developing nations.

Significant health issues could develop for both the mother and the fetus in response. Numerous previous epidemiological studies have recorded the magnitude of the problem. This research sought to assess the frequency of anemia among pregnant women in Iraq during the past decade.

An extensive review of every existing study on anemia in Iraq during the last ten years (2014–2023) has been performed. Relevant studies were found using the online databases ScienceDirect, MEDLINE, and Scopus. Data from various Iraqi studies carried out in multiple cities were combined into a cohesive format. The main sources for data collection include Scopus and PubMed.

The lowest reported prevalence of anemia during pregnancy in a decade was thirty-four percent, whereas the highest was 84 percent. The majority of pregnant women with anemia received adequate prenatal care and experienced only mild anemia during the third trimester. In the study, some of the anemic women regularly consumed meat, fresh fruits, and vegetables throughout their pregnancy. Conversely, some exhibited restricted consumption, as identified through eating habits and nutritional evaluation.

This review study emphasizes the increasing incidence of anemia in pregnant women in Iraq, with one study showing a rate of 84.8%, reflecting a significant public health issue. This problem is common and not limited to Baghdad, impacting several provinces throughout Iraq. Elevated anemia rates significantly elevate maternal morbidity, negative birth outcomes, and long-term health dangers for mothers and children throughout Iraq.

Keywords: Pregnancy, Anemia, Antenatal care, Trimester, Iron supplementation.

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Introduction

Anemia is a significant public health concern that can impact individuals at any age, but is particularly prevalent among young children and pregnant women (1).

It might have harmful consequences. Anemia during pregnancy impacts 38% of the global population, ranking it as one of the most widespread and significant public health challenges (2).

In the 1st and 2nd trimesters of pregnancy, the volume of maternal plasma rises by approximately 50%, whereas the mass of red blood cells grows by merely 20% to 30%. This results in a dilutional decrease in hemoglobin levels (3).

Anemia is defined as hemoglobin levels lower than 11g/dL in the 1st trimester, below 10.5g/dL in the second or third trimesters, and under 10 g/dL postpartum (2).

Iron deficiency may arise in mothers with normal or low iron levels because of the increased maternal red cell mass, fetal iron transfer (mainly during the 3rd trimester), and blood loss during delivery (3).

The biological urge to conceive during pregnancy may rise to three times greater than that of menstruating women and those who are not pregnant, with this desire intensifying as the pregnancy advances (4).

Megaloblastic anemia is another type of anemia that occurs during pregnancy, resulting from elevated folate needs. To avoid megaloblastic anemia and neural tube abnormalities in the fetus, routine supplementation is particularly recommended prior to and during the early phases of pregnancy (4).

Additional factors involve a physiological increase in MCV of 5–10 fL that takes place during normal pregnancy and a decrease in serum cobalamin levels to below normal in about 30% of pregnancy cases, which resolves post-delivery (3).

Anemia in pregnancy can also be linked to deficiencies in other micronutrients, such as riboflavin, copper, and vitamin A (5).

Typically serious and unresponsive to treatment, auto-immune hemolytic anemia manifests during pregnancy. The baby may undergo temporary hemolysis for a period of one or two months. Severe cases of idiopathic, direct antiglobulin-negative hemolytic anemia rarely occur in the third trimester; treatment options include immunoglobulin or corticosteroids, and it typically resolves on its own following pregnancy (5).

Microangiopathic anemia is an uncommon disorder associated with HELLP syndrome (6).

Anemia in pregnancy primarily leads to maternal morbidity and mortality, along with low birth weight, which raises infant mortality rates. It is recognized as a risk factor for various fetal and maternal problems. Preterm labor, inadequate weight gain, rupture of membranes, PIH, accidental membrane rupture, and early membrane rupture are maternal issues during the prenatal phase (7).

During the intrapartum and postnatal stages, maternal risks encompass embolism, post-natal sepsis, and subinvolution. Low birth weight, prematurity, fetal distress, low Apgar score, neonatal distress requiring extended resuscitation,

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and neonatal anemia due to insufficient reserve are all associated risks.

Infants with anemia exhibit lower intellectual developmental milestones, increased instances of failure to thrive, and higher rates of neonatal and infant mortality than those without anemia (8).

Iraq experiences mild to severe anemia across various age groups, with 58% of pregnant Iraqi women suspected of having anemia at a level of 11 gm/dl, based on the anemia database from 2014 to 2023. Most anemic pregnant women (50.2%) received inadequate antenatal care (46.9%), exhibited mild anemia (10-10.9g/dl), and were in their 3rd trimester (9).

Owing to significant dietary deficiencies, it was estimated that 36% of pregnant women in Iraq were anemic (10).

However, healthcare providers require additional information regarding the seriousness of the condition and methods to avert it.

The objectives of this research were to analyze the current condition of anemia during pregnancy in Iraq and to explore the challenges this country encounters in tackling the anemia epidemic.

Material and Methods:

An electronic literature search of Scopus and MEDLINE (Pub-Med) was performed to locate relevant studies on the prevalence of anemia from 2014 to 2023.

The writer also gathered the textbooks accessible online. Both prospective and retrospective clinical studies were incorporated.

The data were obtained from earlier published studies where original ethical approvals and patient consent were likely secured.

The primary emphasis of all the research was on serum ferritin and laboratory findings (Hb).

The WHO classification system for pregnant women was employed to classify anemia in each of these studies. This system indicates that anemia occurs when the hemoglobin (Hb) concentration falls below 11g/dl and is categorized as mild, moderate, or severe based on Hb level ranges: 10-11g/dl, 7–9.9 g/dl, and under 7.0 g/dl (11).

The study will examine the occurrence of maternal anemia in Iraq from 2014 to 2023 based on the chosen research.

Results:

The findings are shown in Table 1. The estimated occurrence of anemia varied between 34% and 84% throughout all studies conducted from 2014 to 2023.

The cities listed in Iraq are: Wasit, Kurdistan, Arbil, Baghdad, and Babil.

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Table 1: Prevalence of anemia of pregnancy in Iraq (2014-2023)

Iraqi city-year	Prevalence of anemia in pregnancy (%)	Number of participants	Author of the study
Arbil-2014	55.5%	400 pregnant women	Ahmed.A. Fφ
Erbil-2017	46.2%	600 pregnant women	Ahmed, H.M., R.G-
Baghdad-2017	67%	124 pregnant women	Khalil. Z. K*
Baghdad-2018	36%	2109 cases of pregnant women	Hussien and Ali, ■
Diyala-2019	68%	590 pregnant women	AL-Shawi, A. R/
Baghdad-2020	84.84%	4473 pregnant women	Jasim S. Kal-Momen, H. Al-Asadi. F∴
Wasit-2021	58%	425 pregnant women	Abdulridha.A. S>
Babylon-2022	76%	110 pregnant women	Mukeef.S. A"
Kurdistan-Erbil 2023	34.4%	157 pregnant women	Rashid.M. Y*

1. ϕDOI:10.5742/MEFM.2014.92418.
2. – Kurdistan Journal of Applied Research, volume 2, NO 2, 2017
3. *Khalil. Z. K (Iraqi Journal of Science, 2017, Vol. 58, No.2C).
4. ■Hussien and Ali, 2018 (Nutrition Research Institute).
5. / ARJ Al-Shawi -AL-Yarmouk Journal, 2019 - iasj.net.
6. ∴Vol.8No. B (2020): B)
7. > Annals of R.S.C.B., ISSN: 1583-6258, Vol. 25, Issue 68." ARCHIVES/Vol. 13 SPECIAL ISSUE 01.9.9. * ARCHIVES / VOL 7 NO 1 (2023) / Research Article.

Discussion

Severe anemia during pregnancy is believed to elevate maternal mortality rates during childbirth. Through a literature review spanning 2014 to 2023, we aimed to assess the frequency of anemia in pregnant women in Iraq. Anemia was observed in 34–84% of instances overall (9-12).

Our evaluation indicates that the peak anemia prevalence in pregnant women in Baghdad reached 84.84% in 2020. This contrasts with a study carried out in 2017 and 2018, which discovered that the prevalence rose following a 2- to 3 years, decreasing from 67% in 2017 to 36% in 2018 (13). This review encompassed several Iraqi cities (Baghdad, Wasit, and Kurdistan), featuring varying participant numbers of pregnant women and differing study lengths across years, leading to diverse prevalence rates.

Our analysis suggests there could be a link between maternal anemia during pregnancy and factors including parity, maternal age, low socioeconomic status, poor dietary habits, and delayed prenatal care.

Anemia can be avoided through various factors, such as being a young mother, sufficient iron and folate intake during pregnancy, and a high family income (11-14).

Multiple studies have determined that blood parameters are crucial in pregnant women and

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serve as the initial step in identifying anemia. The MCV, MCH, MCHC, RBC count, and RDW-CV% are associated with ferritin levels, and blood film morphology can assist in diagnosing IDA and other types of anemia (15-17).

Conclusion

Anemia in pregnancy, particularly severe anemia, greatly increases the risk of maternal mortality and morbidity. Research carried out in Iraq from 2014 to 2023 demonstrates that anemia remains prevalent. Estimates of anemia prevalence ranged between 34% and 84%. The review indicates that the main factors contributing to anemia are low socioeconomic status, repeated pregnancies, and insufficient intake of bioavailable dietary iron. As a result, Iraq faces difficulties in enhancing socioeconomic conditions, boosting educational outcomes, and modifying health-related behaviors

Recommendation:

Additional research is advised to uncover other factors contributing to anemia associated with pregnancy, and

More Iraqi cities need to observe pregnant women, improve their nutritional and educational conditions, and ultimately avert anemia.

Conflict of Interest: None to declare

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